PRELIMINARIES TO THE PREPARATION OF A MACHINE AID TO TRANSLATE LINGUSTIC TEXTS IN ENGLISH INTO TAMIL

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DEDICATED TO MY FAMILY MEMBERS
THE ARCHITECTS OF MY ACADEMIC ACHIEVEMENTS

Late Mr. S.Shanmuganantham Vandaiyar
Mrs. S.Vandaiyar Pappu
Mr. R. Sundaramurthy Kumarakurubaran
Mrs. S.Vairarajamani Mohan
Mr. S.S.Sivanganam
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Dr.S.KAMAKSHI

ABBREVIATIONS

Artificial Intelligence	AI
Artificial Intelligence Technology	AIT
Accusative	acc/ACC
Adjective	Adj / ADJ
Adjectival Phrase	Adj P
Adverb	Adv/ADV
Adverbial Phrase	Adv P
Approximates	App
Augmented Transition Net work	ATN
Auxiliary	Aux
Be verb	BV
Complement	COMP
Compound verb	CV
Dative	Dat/DAT
Determiner	Det/DET
Demonstrative	Dem/DEM
Dictionary of English Word Analysis	DEWA
Direct Object	DO
Finite	FIN
Genitive	gen/GEN
Human Aided Machine Translation	HAMT
Indirect Object	IO
Instrumental	inst/INST
Intransitive Verb	Vi/VI
Knowledge Based Machine Translation	KBMT
Lexical Functional Grammar	LFG
Locative	LOC/loc
Machine Aided Human Translation	MAHT
Machine Translation	MT
Machine Translation Aid	MTA
Modal	MOD
Natural Language	NL
Natural Language Analysis	NLA
Natural Language Processing	NLP
Natural Language Generation	NLG
Negative	Neg/NEG
Noun	N
Noun Phrase	NP
Number	Num/NUM
Object	O
Ordinal	Ord
Perfect	Perf
Phrase Structure Grammar	PSG
Pre-determiner	Pre-Det
Preposition, Postposition	P
Prepositional/Postpositional Phrase	PP

Programming Language for Natural Language Processing	PLNLP
Person Number Gender	PNG
Progressive	Prog/PROG
Pronoun	PN
Plural	PLU/plu
Quantifier	Quan/Q
Relative participle	RP
Sentence	S
Singular	Sing/SING
Structural and Lexical Transfer	SALT
Subject (specified in the content itself)	S
Tense	T
Tree Adjoining Grammar	TAG
Verb	V
Verb Phrase	VP

TRANCRIPTION FOR TAMIL ALPHABETS

Roman	Tamil
a	அ
aa	ஆ
i	இ
ii	ஈ
u	உ
uu	ஊ
e	எ
ee	ஏ
ai	ஐ
o	ஒ
oo	ஓ
au	ஔ
k	க்
ng	ங்
c	ச்
nj	ஞ்
T	ட்
N	ண்
t	த்
nd	ந்
p	ப்
m	ம்
y	ய்
r	ர்
l	ல்
v	வ்
zh	ழ்
L	ள்
R	ற்
n	ன்

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CHAPTER 1

1. PROFILE OF THE PROJECT

1.0. Prologue

It is proposed to explain in this brief profile the aim, objectives, methodology, scope and scheme of the study.

1.1. Aim

The aim of the project is to prepare a Machine Translation Aid (MTA) to translate Linguistics texts in English into Tamil.

1.2. Objectives

To achieve the aim, the following objectives have been kept in mind:

1. To understand the different machine translation models which are in vogue for selecting a feasible model.
2. To study the language of linguistics so that the domain specific features of the language of linguistics is thoroughly understood before proceeding to translate the linguistics texts by using machine.
3. To correlate the structure of the source language, English and target language, Tamil so that the transfer model adopted for translation can be successfully manipulated.
4. To prepare a prototype of Machine Translation Aid (MTA) to transfer linguistics texts in English into Tamil

1.3. Hypotheses

It is proposed to test the following hypotheses in this study:

1. Though the preparation of a completely automated machine translation is difficult to achieve, it is feasible to achieve a human aided machine translation or machine aided human translation.

2. A successful preparation of a machine translation aid needs a thorough linguistic analysis aiming at unfolding the structure of the source language and target language complemented by a correlative study aiming at understanding the mechanism transferring the source language into target language.

3. By making the text of the target language domain specific, i.e. linguistics text, the menace of meaning interpretation in machine translation can be very much reduced.

4. The two powerful properties of human language are:
   i. Nearby words provide strong and consistent clues to the meaning of a target word, conditional on relative distance, order and syntactic relationship.
   ii. The meaning of a target word is highly consistent within any given document.

5. The lexical transfer approach is a transparent and modular model that facilitates evaluation at every step in the procedural mechanism.

1.4. Methodology

As the language differs in grammatical structure and lexical structure, one of the strategies to be adopted for the preparation of the MTA is to overcome these differences by altering the structure of the input to make it confirm to the rules of the target language. This can be done by applying contrastive knowledge, that is, knowledge about the differences between the two languages. Systems that use this strategy are sometimes said to be based on transfer model. It is proposed to adopt the transfer model for preparing MTA to translate linguistics texts in English into Tamil.

1.4.1. Structural and lexical transfer approach for machine translation

Structural and Lexical Transfer (SALT) approach coupled with PLNLP (Programming Language for Natural Language Processing) approach explicated in Jensen et al (1993) is adopted to serve our purpose.

Any natural language processing system can be conceptually divided into three parts:

1. Grammar
2. Dictionary
3. The programming system that holds everything together

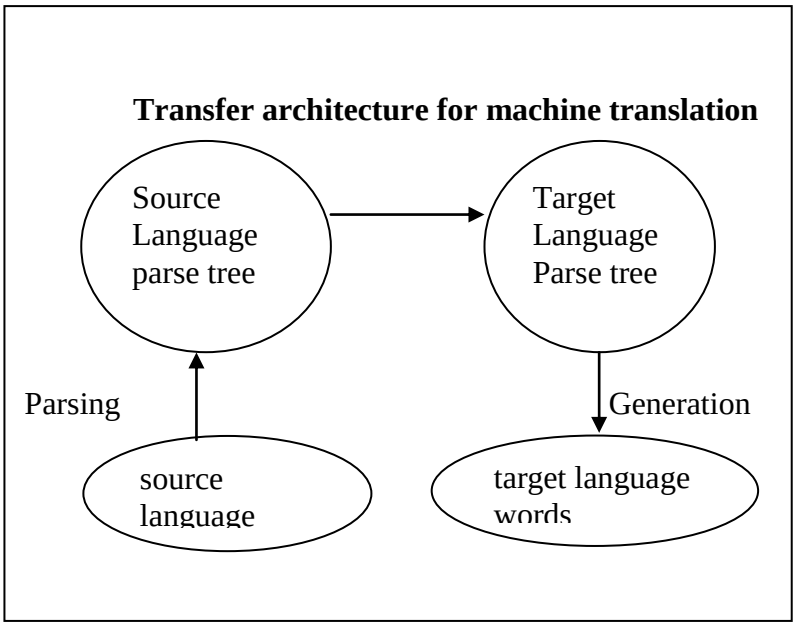
A division between grammar and dictionary (or lexicon) is inherited from linguistics, the study of language. The addition of a computational component is what turns this enterprise into a very current affair. Traditionally, grammars are systems of rules that mediate between symbols and meanings. The rules have a dynamic nature, and are supposed to embody generalizations that hold true for many symbols and combinations of symbols. Lexicons are repositories for particular units like words or phrases, and for information about those units. Lexical information is prototypically static and specific in nature. In this context one may ask about the proper distribution of work between grammar rules and lexicon. Some systems based on versions of Chomskyan theory are to account for linguistic phenomena primarily in the rules. Another tendency, found typically in systems that derive from Lexical Functional Grammar, is to pack a lot of information into the lexical entries, and simplify the rules as much as possible. A certain amount of information is necessary to produce the analysis, and we have two poles for the distribution of that information: rules and lexicon. Different system chooses different ranges along the continuum.

There is an argument that the simplification of PS will complicate the lexicon and vice versa. There are no current standards of evaluation for assessing the relative merits of complexity of the lexicon versus complexity of the grammar rules, for the natural language processing systems. To the contrary, it seems likely that there is a certain amount of information that needs to be specified and manipulated, in order to parse any given sentence

Sentence parser requires programming a computer to make a reasonable syntactic analysis of a sentence possible. Programming a computer to understand that sentence is more difficult, largely because the computer lacks the kind of prior experience that would enable to know what is supposed to understand. The analysis of a sentence using only

syntactic information may contain many ambiguities. Attaching modifiers to their appropriate heads is the other main source of ambiguity. The strategy adopted for dealing with both kinds of ambiguity is that of packing the different syntactic descriptions into the same structure whenever possible.

Since the translation requires some representation of the structure of the input, transfer presupposes a parse of some form. Moreover, since transfer only results in a structure for the target language, it must be followed by generation phase to actually create the output sentence. It is worth noting that a parse for MT may differ from parses required for other purpose. For example, suppose we need to translate *John saw the girl with binoculars* into Tamil, the parser needs to bother to figure out where the prepositional phrase attaches, because both possibilities lead to different sentences. So an MT system needs also to be able to represent disambiguated parses, while being able to work with ambiguities.



1.4.1.1. Lexical Transfer

By lexical transfer we mean the selection of the word, or words, in the target language that best render(s) the concept represented by the source language word or expression. The consequence of a particular lexical transfer choice will then be treated in the structural transfer phrase. Lexical transfer has been characterized as the bottleneck of

MT systems. Basically, lexical transfer is a problem because there is no isomorphism among lexical fields across language. The same word may have several different (and often seemingly unrelated) translations. For example, for the noun *subject* in English has the meanings "*kuTimakan*", "*peecappaTum viSayam*", "*ezhuvaay*" and "*ndipandtanaikku uTpaTu"* in Tamil. This problem is very annoying for translation in general, and for MT in particular, because the correct choices can be conditioned by circumstances ranging from general syntactic restriction to idiosyncratic properties at the lexical level. Moreover, the well-known problem of lexical gaps means that different languages choose different basic concepts to be realized as words and as phrase. To making things worse, even the way words interact in a single language does not seem to be a function of their meaning alone. And finally, there are idioms, frozen phrase that have lost their literal meaning and that simple to be memorized to be understood. Idioms are very culture-dependent, and more often than not cannot be literally translated. All of this raises doubt about the usefulness of word-to-word translation.

The foundation of lexical transfer is dictionary lookup in a cross language dictionary. The translation equivalent may be a single word or it may be a phrase, as in the example where *gardening* becomes *tooTTaveelai ceytukoNTiru* ('garden work doing'). Furthermore, sometimes a generation process must subsequently inflect words in such phrases, as in this case.

It is a well-known fact that a word may have several possible translations. *Bank* is such a word. It can mean 'a place where money is kept' and also 'the land near river, etc.' fortunately there are at least two ways to tackle this problem: in the parsing or in the generation stage. The first method is to treat words like *bank* as if they were ambiguous. That is we assume that *bank* corresponds to two concepts and that choosing the correct Tamil word is like disambiguating between these concepts. This way of treating lexical transfer lets us to apply all the standard techniques for lexical disambiguation. A second way is to treat such words as having only one meaning, and to handle the selection among multiple translations (*karai* 'bank of a river', *vangki* 'place where money is kept') by using constraints imposed by the target language during generation. In practice, these cases are more often dealt with in the parsing stage, as the algorithm for lexical choice during generation are high-overhead, especially for content words. In the case of examples of the following type the choice is easy.

He puts his entire savings in the bank.

Because the words with which *bank* is collocated makes the choice *vangki* 'place where money is kept' instead of *karai* 'place near river'. Such inputs, where multiple source language words must be expressed with a single target language word, can be difficult to handle, requiring inference in the general case. But many such cases, including this one can be treated simply as idioms, with their own entries in the bilingual dictionary.

1.4.1.2. Structural Transfer

Our view of structural transfer does not impose any particular set of distinct linguistic levels at which transfer takes place. Depending on the problem at hand, a transfer may occur at any level of analysis, reflecting differences ranging from morpho-syntactic to cultural ones.

Morphological Level:
scissors → *kattiri*
PLURAL → SINGULAR

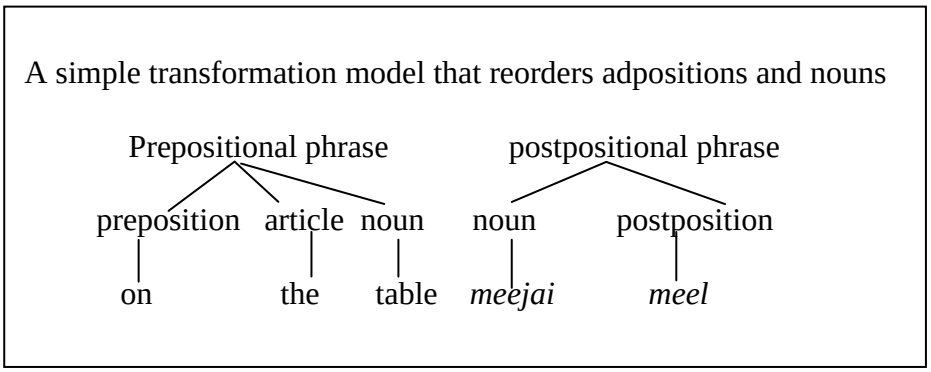
Syntactic Level:
She is beautiful → *avaL azhakaanavaL*
NP+Aux+Adj NP+Adj-PNG

Cultural context level:
Please come in → *vaarungkaL*

Some of the output words are determined in the course of syntactic transfer or generation. In the example above, the function words are mostly grammatically controlled. Content words are another matter. The process of finding target language equivalents for the content words of the input, lexical transfer is difficult for many reasons ranging from lexical conceptualization to grammatical conceptualization.

1.4.2. Exemplification illustrating the transfer mechanisms

The use of postposition in Tamil in the place of preposition in English stands to exemplify the mechanisms of structural and lexical transfer. Temporarily postponing the question of how to translate the words, let's consider how MTA can overcome such difference. (Adposition is a common term which is used here to cover up preposition and postposition.)

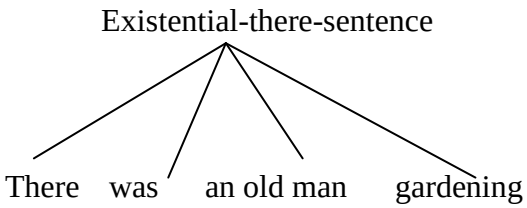


The above figure suggests the basic idea. Here one parse tree, suitable for describing an English sentence, is transformed into another parse tree, suitable for describing a Tamil sentence. In general, syntactic transformations are operations that map from one tree to another.

The following exemplification will illustrate roughly how such transformations can restructure an entire sentence.

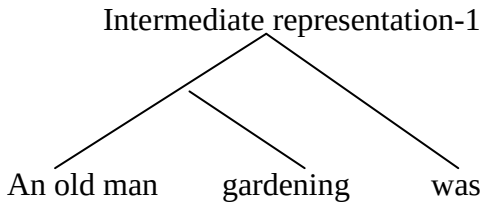
There was an old man gardening.

Assume that the parser has given a structure like the following:

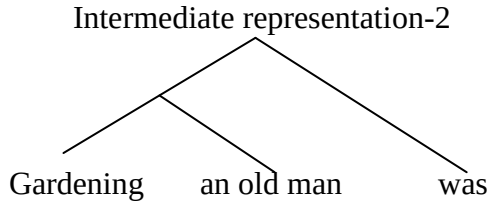


Since this sentence involves an "existential there construction", which has no analogue in Tamil, a transformation has to be applied to delete the sentence-initial *there* and convert

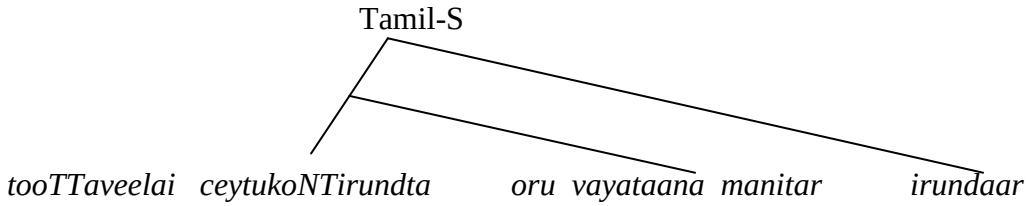
the fourth constituent into a relative clause modifying the noun, producing something like the following structure:



The resulting structure is thus something more like the structure of a pseudo-English sentence: *an old man, who was gardening, was*. Next, another transformation applies to reverse the order of the noun phrase and the relative clause, giving something like the following structure:



At this point all relevant transformations have applied, and lexical transfer takes place, substituting Tamil words for the English ones. This gives the final structure given below:



A little more syntactic work is required to produce an actual Tamil sentence, including inflecting the verb. The final generation step transfers or otherwise linearizes the tree to produce a string of words. The final output will be:

tooTTaveelai ceytukoNTirundta oru vayataana manitar iruntdaar

The following table shows a rough representation of the transformations, which have been discussed above. Such transformation can be implemented as pattern-rewrite rules:

if the input matches the left side of a transformation, it is rewritten according to the right side.

English to Tamil	
1.	PP ⟶ Preposition noun ⇒ PP ⟶ Noun2 Postposition
2.	Existential-There-Sentence ⟶ There1 Verb2 NP3 Postnominal4 ⇒ Sentence (NP ⟶ NP3 Relative-Clause4)Verb2
3	NP ⟶ NP1 Relative-Clause2 ⇒ NP ⟶ Relative-Clause2 NP1
Table no.1 An informal description of some transformation	

1.5. Scheme of the study

The study has been divided into seven chapters that are listed below:

1. Profile of the Project
2. A Brief Study of Machine Translation Systems
3. Architecture of Sentence Building Mechanism in English
4. Architecture of Sentence Building Mechanism in Tamil
5. Mechanism of Transfer of English Sentences into Tamil
6. Language of Linguistics
7. Preparation of a Prototype of MTA

The first chapter entitled "Profile of the project" explains the aim, objectives, hypothesis, methodology, scheme, and scope of the thesis.

The second chapter entitled "A brief survey of machine translation systems" explores the different machine translation systems in vogue and selects a convenient one among them to fulfil the mission of preparing a machine translation aid to translate linguistics texts in English into Tamil.

The third chapter explains in details the architecture of word building, phrase building, clause building and sentence building mechanisms of English. The word building mechanism of English has been studied so that the meaning of a word form in terms of lexeme and inflectional and derivational affixes can be correlated with that of Tamil to facilitate lexical transfer. The different patterns of major phrases such as noun phrase, verb phrase, adjectival phrase, adverbial phrase and prepositional phrase of English have been identified and depicted in structural terms to implement parsing technique. The different types of clause structures of both independent and dependent clauses have been thoroughly studied to correlate them with that of Tamil. All the sentential patterns have been identified. The different types of sentences and their word order have been studied, and there by identified the ways by which parsing can be performed on the English text and get the needed parsed trees for lexical and structural transfer.

The fourth chapter explains the architecture of sentence building mechanism of Tamil. The mechanism of building words has been explained to facilitate building of 'Tamil analysis dictionary' and 'Tamil generation dictionary' that help in designing lexical transfer module. The items and the arrangement of them in major phrases such as noun phrase, verb phrase, adjectival phrase adverbial phrase and postpositional phrase have been studied with the eye on transfer mechanism. The mechanism of building clauses by coordination and subordination has been elaborately dealt with to facilitate structural transfer. Different types of Tamil sentences and their word order have been studied with the aim to transfer the English sentences into Tamil.

The fifth chapter portrays the mechanism of transferring word forms, phrases, clauses and sentences in English into Tamil by correlating the structure of the two languages. The commonalties and differences in the structure of English and Tamil from the point of view of computation to build a machine translation aid to translate English into Tamil have been explored. The word building mechanisms of Tamil and English have been correlated with an aim to help in designing lexical transfer module. Noun phrase, verb phrases, adjectival phases, adverbial phrases and adpositional phrases have been correlated to understand the mechanism of transferring of these phrases in English into Tamil. It has been noticed that the two languages deviate from one another from the point of view of English as language of SVO (i.e. verb medial language) and Tamil as

language of SOV (i.e. verb final language). While English makes use of preposition to link nominal arguments with verbs, Tamil makes use of postposition and case markers to meet the same. The absence of regular case inflection in the case of English makes it rigid in its word order and the presence of case inflection in Tamil makes it more flexible in its word order. English distinguishes subject from object by means of the position, i.e. word order; where as Tamil does it by case inflection. Relative clause in English comes after the head noun, which is attributed and in Tamil it comes before the head noun. The infinitive clause in English comes after the main clause, whereas in Tamil it comes before the main clause. That-clause complement occurs at the right side of the main clause in English, whereas it occurs at the left side of the main clause in Tamil. Interrogation is effected by changing the order of the words, i.e. by moving an auxiliary verb to the initial position before subject. In Tamil interrogation is effected by suffixing interrogative clitic or by making use of interrogative words. In English, the auxiliary verbs and the interrogative words occur in the initial position of the construction. In Tamil, the interrogative particles occur in the final position of any word in the construction. All these correlative features have to be taken into account while designing the structural transfer module to restructure English as per Tamil sentential structure.

The sixth chapter entitled "Language of Linguistics" identifies the characteristic features of language of Linguistics. The idea is to limit the machine translation system to work on a domain specific language so that the text to be translated can be kept under control. The salient features of language of linguistics have been studied so that the complexity involved in preparing an MTA for general use can be minimised. The unique characteristics of language of linguistics (i.e. the style of linguistics) have been discussed in this chapter. In terms of selection of vocabulary and technical terms linguistics differ from other discipline. Its discourse structure is also unique in nature. It is a must for us to understand the language of linguistics as the aim of the study is to translate linguistic text- books in English into Tamil. What is applicable to English is also applicable to Tamil as for as the language of linguistics is concerned. As Tamil is still a developing language as for as the linguistic discourse is concerned, the transfer of ideas from English to Tamil is a hard task. The problem of finding equivalents for technical terms coupled with transferring linguistic discourse in English into Tamil is a paramount. So it is

essential to understand the unique features of language of linguistics before attempting to prepare an MTA for transferring linguistic knowledge in English into Tamil.

The seventh chapter entitled "Preparation of a prototype of MTA" promotes the first and foremost aim of the study. A transfer model approach has been adopted to fulfil the aim of this study. Though it cannot be said that it is a full-fledged model, it definitely can convince one that an MTA prepared after correlative study of the source and target languages and by restricting the transfer to domain specific language (i.e. linguistics) will be a way ahead of other models. The step-by-step procedure of achieving the aim has been explained with illustrations. The preparation of a tagger and parser and a transfer model to transfer the linguistics texts in English into Tamil has been explained with the aim to lay a foundation for future research.

1.6. Scope

The scope of the present research work is a wider spectrum of identifying translation equivalents ranging from words to sentences and transferring the linguistic discourse in English into Tamil. The MTA can help a linguist who wants to translate a linguistics text in English into Tamil in many ways. It can help one to carry out off line translation tasks, the result of which can be available to the end users in the form of printed-paper books or E-books.

1.7. Epilogue

No claim is made here that a full-fledged automatic translation can be achieved by making use of the present prototype. But the prototype can be converted into a full-fledged package for translating linguistics texts in English into Tamil with human interference if proper changes are adapted to suit the new requirements. The exhaustive correlative study of English and Tamil which amalgamates both contrastive and typological studies of the two languages will be a future documentation for one who will attempt for a full fledged MT system for transferring English into Tamil.

CHAPTER 2

2. A BRIEF STUDY OF MACHINE TRANSLATION SYSTEMS

2.0. Introduction

This chapter aims to make a brief survey of the machine translation systems and tries to understand the state of art of machine translation system in India and aboard. The critical evaluation of the machine translation systems is not attempted here. The attempt here is to select a model to accomplish building a machine translation aid to translate Linguistics text books in English into Tamil giving more emphasis on the linguistic principles. The chapter covers up the following items:

1. Natural language processing
2. Typology of machine translation
3. State of art of machine translation
4. A brief discussion on a typical machine translation process
5. Some problems in machine translation
6. Future of machine translation

2.1. Natural language processing

Linguistics has a hundred-year history as a scientific discipline, and computational linguistics has a forty-year history as a part of computer science. But it is only in the last five years that language understanding has emerged as an industry reaching millions of people, with information retrieval and machine translation available on the Internet, and speech recognition becoming popular on desktop computers. Theoretical advances in the representation and processing of language information have expanded this industry. Historically distinct fields such as natural language processing, speech recognition, computational linguistics, and computational psycholinguistics have merged into a single discipline. The goal of NLP is to build computational models of natural language for its analysis and generation. First, there is technological motivation of building intelligent computer systems such as the following:

1. Machine translation systems
2. Natural language interfaces to data bases

3. Man-machine interfaces to computer is general
4. Speech understanding systems
5. Text analysis and understanding systems
6. Computer aided instruction systems
7. Systems that read and understand printed or handwritten text

Second, there is a cognitive and linguistic motivation to gain better insight into how humans communicate using natural language (NL). The tools of work in NLP are the following:

1. Grammar formalism
2. Algorithms and data structures
3. Formalism for representing world knowledge
4. Reasoning mechanism, etc.

Many of these have been adopted from Computer Science, Artificial Intelligence, Linguistics, Logic and Philosophy.

2.2. Typology of machine translation

One of the main intentions of inventing the computer of today is for the purpose of translation. The term automatic translation or machine translation is now used in the sense of translation of text of one natural language to another by computer. The primary aim of MT research today is to produce the best possible automated translation, whenever it is feasible from one language into another language. It is done through the combined efforts of linguists, programmer and researchers of related field. MT research groups in the United States and elsewhere were limited to such tasks as the following:

1. Construction of schemes for machine-stored bilingual dictionaries
2. Development of grammar codes for dictionary entries
3. Syntactic analysis including automatic sentence parsing and automatic language resolution, contextual resolution of text ambiguities and other information thought necessary for the development of automatic procedures adequate to handle the translation process

A translation process is essentially making correspondence between a source and target language. Translation is not simply a process of getting word-to-word equivalents. It combines creativity and the power to analyse the structure of both source and target languages. Problem concerning the syntax, semantics and the contextual usage of words will have to be tackled in a more effective way during the process of translation. Generally the process of translation can be classified as follows:

1. Human translation
2. Machine aided human translation
3. Human aided machine translation
4. Machine translation

Human translation is the best compared to other translations, the quality of which depends upon the knowledge of translator on source language and target language and his experience and efficiency in doing the job. But a translation by a human translator takes more time. A machine translation can be done in a far greater speed. Computer is the machine available for doing this job.

There has been much renewed interest in machine translation since the early 80s. There have been several large efforts; a few of them are listed below:

1. Eurotra for European languages
2. Mu for Japanese and English
3. KBMT between English and Japanese at Carnepic Mellon University
4. *Anusaaraka* among Indian languages at IIT Kanpur

2.2.1. Classification of Systems

Various machine translation and NLP systems that we see can be classified with respect to the following parameters (Bharati et al, 1990):

1. Portability: Hand held, laptop, or fixed
2. Input mode: keyboard, speech, and optical reader
3. Output mode: CRT or LCD display prints speed

4. User dependence: Whether the system works only for a specific user (i.e. works only after being trained on a particular user's input) or for a general user (i.e. without training). This is relevant for speech and hand writing recognition.

5. On line / off line task: For online task the end user directly interacts with the system; while for an off line task, the system might be operated by a trained person to produce results that the end user sees later. Examples are language interpreter (for speech) vs. language translation (for books) respectively, for the on line and off line modes.

6. Domain specificity: This would depend on whether the device would function in some specific domains such as science, everyday needs, tourists, queries, and railway inquiry.

7. Time needed to build: immediately (0 to 2 years) short term (2 to 5 years) medium term (5 to 8 years) long term (8 years or beyond).

8. Telecommunication facilities yes, no.

The following are the few translation devices (Bharati et al, 1990):

1. Hand held translation device for visitors
2. Translation devices at public places
3. Remote script readers
4. User specific speech translation
5. Speech interpreters
6. Off line Translation

2.2.1.1. Hand held translation device for visitors

A handheld translation device would be extremely helpful when a visitor or a tourist goes to a region whose language he does not know. The device would have a keyboard for input and a single line LCD for output in its simplest form. However both would be multilingual. The visitor keys-in his query in his language and the translated text is displayed in appropriate script of the region. The query can be answered by a local person by gesturing, pointing or keying-in his answer. In the latter case, reverse translation would be carried out. A device that handles a fixed set of phrases (with possibly some tree form phrases using a small vocabulary) is possible is to be built

immediately. The domain here is limited to the kinds of queries visitors or tourists ask in a new place. This serves to narrow down the ambiguity in NL.

2.2.1.2. Translation devices at public places

A translation device would be extremely helpful at public places such as railway station, bus terminus, air terminals, post office etc. A keyboard and display device is possible in short-term future. Specificity of domain and small number of queries that can be asked, make it possible in the short term. The bottleneck with such a device could be the slow pace of interaction.

2.2.1.3. Remote script readers

Remote script readers would allow a visitor to read sign boards (for streets, railway station buses etc).

2.2.1.4. User specific speech translation

The user specific translation device would accept speech input from a specific user (on whose speech the device has been trained). Then the device will translate the input into another language and produce speech output (or alternatively display it on a thin light screens attached to the front clothing of the speaker). The listener on getting the translated message would speak into his specific machine and the reverse translation process would be repeated. Such a device should be possible in medium term future for domain specific conversation.

2.2.1.5. Speech interpreters

General purpose, speaker independent on-line speech interpreters are far away (beyond long-term future). For making such devices, major progress is needed in speaker independent speech recognition, generation and domain independent machine translation.

2.2.1.6. Off line Translation

There are a large number of translating tasks that can be carried out off line, the results of the translation can be made available to end-users later using conventional technologies (such as printing press). Translation of books or written materials falls in this category. Such a shift in focus opens up a host of new possibilities. We can aim to build translator's aid, a task that seems more feasible at the current level of technology, instead of aiming at building high quality fully automatic translation system, Such aids in their rudimentary form can provide dictionary and word processing support to the human translator whenever the machine is unable to understand or resolve ambiguity in the input text. Pre-editing or post-editing by the human translator can also be resorted to. It is a growing feeling around the world, that MT should concentrate on producing tools for the human translator rather than on building fully automatic systems. Some example applications are:

1. Translation in specified domains
2. Translation to tribal and rare languages
3. Subtitling of films and TV programmes

2.2.1.6.1. Translation in specialized domains

At the present moment, MT can hope to provide aids for translation in delimited domains only. Domain independent general translation is still too difficult to be attempted. Suitable domains, which also have the volume of translation work, are:

1. Scientific publication in various disciplines
2. Popular science literature
3. Official government documents, minutes of meetings, etc.

Documents relating to law and rules are not good candidates because such documents have to be translated and worded carefully to avoid ambiguity.

2.2.1.6.2. Translation to tribal and rare languages

MT can be of immense help in providing translations into those languages which are not widely known. This is so because human translators for such languages are in short supply.

2.2.1.6.3. Subtitling of films and TV programs

There are proposals at Doordarshan (Indian TV) to broadcast subtitles in all regional languages for the network programs. The regional transmitters can pick the appropriate language subtitle and broadcast it with the picture. Producing sub-titles into all Indian languages will be a stupendous task. Making subtitles from the sound track is a difficult and creative task that is well beyond the scope of any automatic system. However, if sub-titles were available in one language (it could even be the same language as that on the sound track thus separating translation from sub-titling) machine aids would help in translating it into other languages. This is a task, which can have a major impact; and it is feasible in the short-term future. What needs to be explored is whether the domain has to be delimited to some specific area, say, and (UGC) science films.

2.3. State of the art of machine translation

"Translating Languages with Computer" – Machine Translation (MT) has been one of the greatest dreams in computer applications. And this dream is gradually becoming a reality. Research on MT is an intellectual challenge with worth motive and practical objective. The challenge is to produce translations as good as those made by human translators. The motive is removal of language barriers. The practical objective is the development of economically viable systems to satisfy growing demands for translations. Contrary to general belief, there is a considerable shortage of human translators even for technical translations. To fill this vacuum there is an increasing demand, worldwide, for MT systems.

MT comes under a generic heading of NLP. At the same time, because the technology involves many complex tasks, it is often seen as a category unto itself. This special status of MT also stems from the fact that it was the earliest kind of NLP. The theoretical and methodological bases of MT are computational linguistics theories and NLP technologies. Application of these theories and methodologies involve many issues such as dictionaries/lexicon, terminology banks, analysis of source sentences, transfer of

intermediate representations, generation of target sentences, computer environments for developing and examining machine translation systems, operational environments, pre-editing of source sentences, post editing of target sentences and so on.

2.3.1. Initiatives in US

Most of the early works on machine translation also known as automatic translation, mechanical translation, or simply MT is reported from USA and then USSR. Some work was also done in UK, Italy and Israel. These efforts were based on word-to-word translation schemes as it predates the important work in linguistics and computer science on syntax, grammar formalism and parsing. During 1950's there were several research projects on MT in USA. One of the famous systems is Georgetown university-IBM joint project for translation from Russian into English. US Government invested significant amount of research funds in late 50s and early 60s mainly to develop Russian-English MT systems. In 1964 an Automatic Language Processing Advisory Committee (ALPAC) was constituted by US Government to advise Department of Defense, Central Intelligence Agency and the National Science Foundation on research and development in the general field of mechanical translation of foreign languages. This committee in its report (1966) stated impracticability of such systems, which resulted in suspension of government funding in this field. As a Consequence, there has been very little specific research in MT conducted in Higher Institutions in US. However, the experts who had been working in this area moved over to private sector and succeeded in developing a workable system 'SYSTRAN', which was productionised in 1969 and was adopted at several places by 1973 with additional improvements made afterwards. These achievements elsewhere, once again stimulated intent and also large scale funding by US Government.

2.3.2. Initiatives in other countries

In Japan research in MT began as early as 1957 at Denki Shikenju (Presently Technical Laboratory, Tsukubu) and universities. The attempt was largely limited to basic research without any private application. In France, a Study Group for Machine Translation GETA was founded in 1971, although isolated research in MT was going on since 1961. Using their past experience, the goal of "perfect machine translation" was abandoned in favour of "human aided machine translation" (HAMT). European

Community was also becoming interested in MT since 1960s and sponsored GRENOBLE project and number of other projects. The involvement of European community led to some kind of renaissance, which helped to overcome the disastrous consequences of ALPAL report. EUROTRA co-ordination group was established in 1978 with participation from competent University Institutes of all member states of the commission of the European community (There are twelve member states and nine official and working languages. The duration of the programme was set at five and half years and the community budget was to be 16 million ECUs. This was to be complemented by 10 million ECUs of direct National contribution, as EUROTRA is a cost-sharing programme. Yet another programme “Multilingual Action Plan" (MLAP) was also initiated in Europe in 1977 for productivity of EC translation services and Trans European Information flow.

Canada is a bilingual country with English and French as their official languages. Canadian Government had also been supporting several R & D projects in the area of MT. One of the most successful Machine Translation systems TAUM METEO was put into operation since 1977 and provided translation of weather forecasts sentences in English and French. It has no pre-editing or post-editing and is fully automatic.

These were some of the early attempts towards MT all over the world. Intense activities in this area have been witnessed in 80s and 90s, with advances both in computational linguistics and computer science, stimulating large scale funding by Government agencies in the United States and elsewhere.

2.3.4. Changing faces of machine translation

Research in the area of machine translation started much earlier to that in the area of NLP. Various approaches for MT have been suggested and tried out. With the advances in computational linguistics and availability powerful computers further refinements in these approaches were noticed, besides the emergence of new approaches.

2.3.4.1. Direct approach: first generation

The very first proposals of the "First generation" of MT for using computers to translate till about 60s were called "direct" approach. These were essentially dictionary driven methods with no or low-level syntactic analysis and use of semantic features. These efforts came to an end with the publication of ALPAC deport in 1966. There was a very little activity for about a decade thereafter.

2.3.4.2. Transfer approach: second generation

The Internets were revived in 1976 with the installation of SYSTRAN, a weather forecast translation system in Canada. Increasing activities followed throughout the world and rule based, syntax oriented abstract transfer representation approaches became the "second generation" of MT. Examples are Ariane of the GETA project in France, EUROTRA of the commission of European communities and Mu of the Kyoto University, Japan. At the same time, considerable work was also going on rule based interlingua models. In machine translation systems, an intermediate representation is necessary to express the results of sentence analysis. This represents syntactic and semantic structures of an input sentence given as a character string. Syntactic structure is shown as tree and semantic structure as a network. This intermediate representation of interlingua approach is called inter-lingua. Notable amongst the interlingua models was the CMU project at Carnegi Mellon University in USA and multilingual machine translation project at centre of international co-operation for computerization in Japan. Around this time commercial systems began appearing on the market sense, most of them being for translation from English to Japanese and vice-versa. They also migrated from main frames to PCs and became popular.

2.3.4.3. Corpus based approach: third Generation

By about 1989, a new era and the "third generation" began in MT research with the emergence of wide range of collectively called "corpus based" approaches. This represented a new departure in MT research. These corpus-based approaches include two categories. The first one uses direct information derived from corpora for analysis, transfer and generation of translations. This category includes statistics based, example based and connectionist approaches. Second category makes an indirect use of corpora as

a source of information for deriving or coupling lexical, grammatical and knowledge databases. This second category consists of a range of activities such as database compilation, lexical and knowledge acquisition and statistical information to aid or complement rule based methods.

Essence of statistics based method is the alignment of sentences in the two languages and the calculation of the probabilities that any one word in a sentence of one language corresponds to two, one or zero words in the translated sentence in target language. The IBM-candide research project based on a large corpus of the Canadian Hansrad, records of parliamentary debates in English and French is an example.

Example based method was first purposed in 1980s but was implemented only a decade later. The basic philosophy in this method is that translation is often a matter of finding analogous examples. The method essentially relies on a bilingual database examples derived from a large corpus of texts and their translations. Example based machine translation approach has been extensively used in ATR project of Japan for spoken language translation. Another example is knowledge based machine translation (KBMT) at Carnegi Mellon University in USA.

Connectionist approach is a result of research in parallel computation, neural networks or connectionism. Being the latest, these developments have attracted the MT researchers also. Connectionist method computes the distance between input text segments and bilingual text data in example based MT model. It offers the prospect of systems "learning" from past successes and failures. Previously, learning has meant that systems suggest changes on the basis of statistics about corrections made by users at the post-editing stage.

2.3.4.4. Hybrid approaches on the horizons

The Hybrid approaches are also on the horizons. In some such approaches, corpus information is used for tuning analysis and transfer grammar. In others a standard transfer based MT approach is followed using traditional analysis and generation technique but having transfer component based on aligned bilingual corpora. In yet

others, statistical information is used as the source of preference assignment during text disambiguation.

2.3.4.5. Machine aided human translation and the paradigm shift

The speed at which MT researchers are abandoning or supplementing their traditional rule-based paradigms in favour of corpus-based approaches provides a striking proof of their general lack of enthusiasm for the results of the last three decades of MT research. No doubt that this feeling is fulfilled in part by the fact these result have not allowed the MT business is to penetrate any more than a marginal segment of the global translation market. Martin Kay (1980) who contemplated this failure forcefully urged the MT community to shift its near–term goal away from classical MT towards machine-aided human translation (MAHT). While many MT researches probably felt that Kay's proposed program was a more sensible way to go, most of them declined to sign up for the journey and preferred to stick it out for another decade on their familiar path towards an improbable place. This reluctance to give any serious consideration to MAHT clearly had something to do with the prevalent rule based paradigm of MT. It is in fact very hard to single out, within three decades of rule based MT research, a single result that has any obvious and immediate potential from the point of view of MAHT. There was just no straightforward way of applying the core techniques of rule-based MT systems to the development of translation support tools.

But just the opposite appears to be true of corpus based approaches. For example, one of the very first results obtained within this new paradigm is the development of algorithms capable of aligning the sentences of bilingual texts. This simple result turns out to be of fundamental importance from the point of view of MAHT. It constitutes in itself a suitable foundation for many kinds of new translation support tools. Rule-based MT tends to focus exclusively on the translation production problem. In the rare cases where it is possible to define good and complete translation models, this approach yields

effective MT systems. But in all other cases, those where MAHT is called for, it turns out to be very difficult to make any use of production-oriented models. For example, it is hard to see how the particular target text intended by some translator could be partially generated in advance. Corpus based methods, on the other hand, start from translation that have already been produced by humans and seek to discover their structure, completely or partially. This analysis-oriented perspective lends itself naturally to the development of translator's aids because in MAHT the machine is not expected to produce the translations, but rather to understand enough about them to become helpful.

Translation analysis is to process of making explicit some or all of the translation correspondences that link the segments of a source text with those of its translation. Sentence alignment is a kind of translation analysis that aims at showing correspondences down to the level of sentences. No more than an extremely weak translation model appears to be needed for that particular task. Research is currently underway to develop analyses capable of accounting for finer translation correspondences (e.g. between phrases words and even morphemes). But existing techniques already open the way to a whole new fancy of translation support tools which include the following: 1. Translation memory applications, 2. Translation checkers and 3. Translation dictation systems.

Translation analysis can be used to structure pre existing translations in such a way that they become reusable in the production of new translations. For example, the CWARC's Trans Search system is a bilingual concordancing tool that allows translators to search special purpose databases for ready-made solutions to specific translation problems. These databases result from the application of sentence alignment techniques to pre-existing translations.

Translation analysis can also be applied to draft translations with the goal of detecting certain kinds of translation errors. To the extent that we can automatically reconstruct the translation correspondences between the source and a draft target text, we can verify that these correspondences obey certain constraints. For example, it should be possible to verify that the translation is complete, in the sense that all-large chunks

(pages, paragraphs, sentences) of the source text have been translated. It should also be possible to verify that the translation is free from interference errors such as those caused by deceptive cognates (e.g. English actual and French *actual* are not acceptable as mutual translations). The CWARC is currently developing a prototype translation checker called Trans Check. Finally translation analysis can be used to improve the performance of speech recognition for dictated translations. Suppose that a translator is about to dictate his translation of an English sentence that contains the word *government*. Given the situation, the likelihood that his utterance will contain the acoustic image of the French word *government* becomes much higher than for a chance utterance. This kind of probabilistic translation knowledge can be built into a speech recognition system used for the automatic speech-to-text transcription of dictated translations. This amounts to applying translation analysis to a situation where the target text is spoken rather than written. The TransTalk project, a joint effort of the CWARC and the C*entre de recherché informatique de Montreal* (CRIM) is currently exploring this approach. While there is no certainly that the current paradigm shift towards corpus-based approaches will result in better MT systems, we conclude that it will be highly productive from the point of view of MAHT. Emerging translation analysis techniques promise no less than a new generation of tools for translators. MAHT is about to become a booming business.

2.3.5. Technology wave of machine translation research and development

To bet on what will be the next wave of MT Technology, one can always look at the last wave of AI technology and computational linguistics research. It is not a surprise as MT actually is a large-scale AI problem. Looking back at the history, MT technology in a decade was based on the AI technology of the preceding decade: MT technology in the 60s are mostly “direct” approach which basically make use of a series of pattern matching techniques. MT technologies of the 70s are mostly “transfer” based approach making use of transformation of syntactical rules. In the late 80s semantic based approach for MT was developed making use of knowledge based technology developed by AI researches. Some attempts to leap-frog the AI technology, e.g. the CETA interlingual experiment, had failed. Hwee-Boon raises the following question: "Will the next wave of MT technology to be developed in the 90s based on Neural Network, Case based reasoning, or any other AI Technology emerged in the 80s?"

Wave of MT Technology

AI Technology	MT Technology	MT Application
50s pattern matching	Direct – symbolic pattern	SYSTRAN
60s parsing	Transfer of syntactical Rules	GETA
70s Expert system	Interlingual with semantic	CMU
80s Neural Network	NN or Case based MT?	???
90s Machine Learning		

2.3.5.1. Application wave of machine translation technology

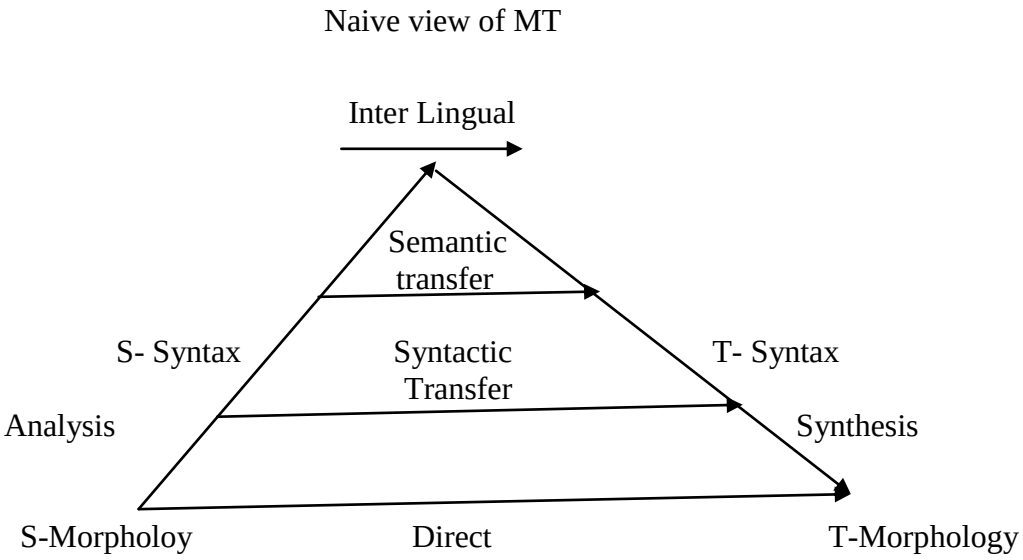
The application of MT technology seems to follow a decade after the MT technology. In fact the commercialization of MT is a good filter for wide varieties of MT technology developed. Only those MT technologies which can be sealed up, either technically in handling large number of dictionaries and linguistic rules, as well as cost effective enough in the development and maintenance of Lingware have a chance of survival. Earlier commercializations of MT, e.g. SYSTRAN are mostly "direct" approach based on MT system. In the early 80s, several new MT entrepreneurs or start-ups have been deployed for servicing large-scale English/French or English/Spanish translation. None of them used interlingual approach. The MT applications of the 90s are emerging, attempting at Multilingual capabilities with semantic and knowledge based approach.

2.3.5.2. Naive View of machine translation

To a new comer in the field of MT, one will most likely come across a triangular figure illustrating generations of MT technology. The base line is the first generation of "direct" approach, the middle line is the second generation of transfer approach and the tip at the top of the triangle represent the "ultimate" third generation solution: "interlingual" approach.

This illustration is too simplistic in describing generations of MT technology. It is also misleading as it implies that the interlingual approach is the latest the "last" generation in which there will be no other newer approaches to MT after this generation.

On the other hand, it has an interesting feature that reflects the reality: the effort in developing an MT system based on a certain approach is proportional to the distance travels on the diagram. Hence, "direct" approach takes less effort than "transfer" approach and "interlingual" approach takes the most effort.



A simplistic view:

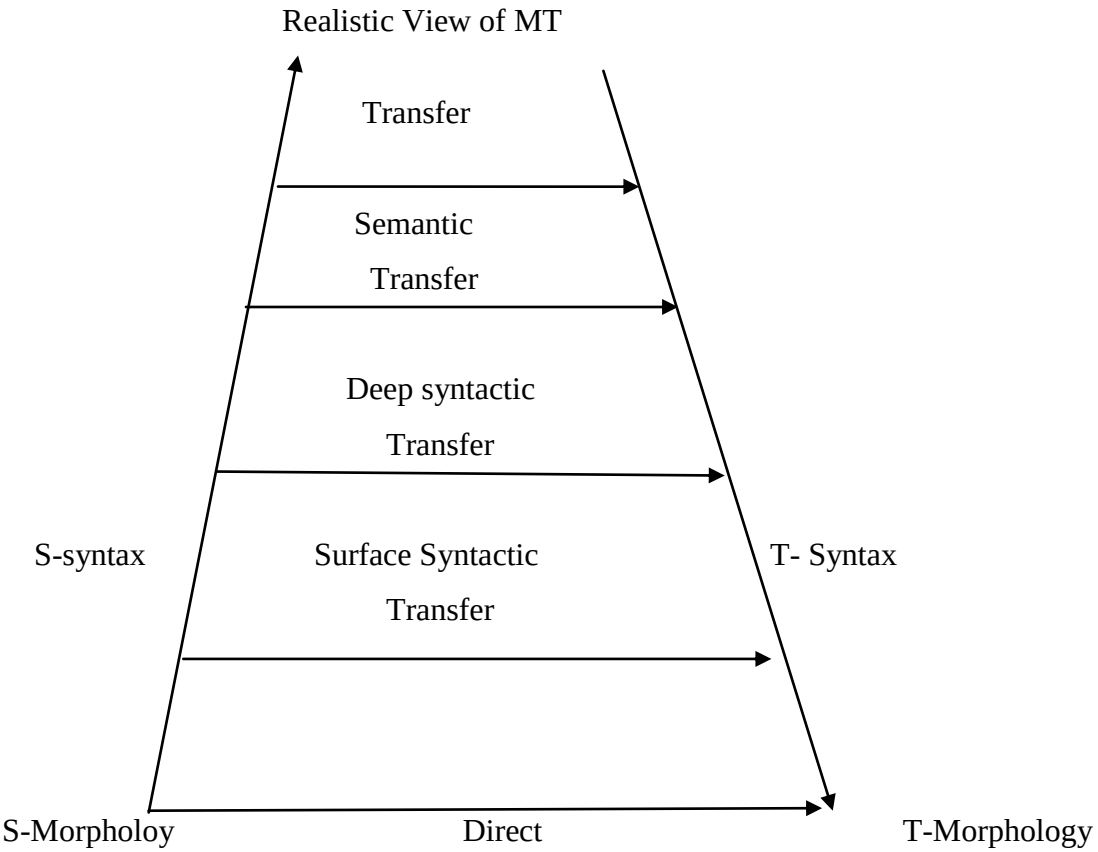
3 Generations of MT Technology
1st: Direct
2nd: Transfer
3rd: Interlingual

2.3.5.3. Realistic view of machine translation

A more realistic illustration of MT is a Hyperbola shape, where by theoretically, the two ends never meet each other. This implies that pure interlingual will be always a dream. We can only try our best and through the accumulation of knowledge and technology, reduce the "distance between any two languages".

The hyperbolic diagram illustrates few characteristics. Firstly there exists a series of transfer approach at different language hierarchy. The typical MT technologies in the 70s are at the syntactic level and that of the 80s are position at the semantic level. Secondly, not only the effort is proportional to the distance travel, the further up in the language hierarchy level, the more stepper it takes and hence much more effort is

required to reach higher linguistic strata. The explanation for this phenomenon is quite obvious. The lower level can be restricted to the domain of language. At the semantic level, one requires knowledge of the objective world and at a higher level; one has to deal with knowledge of the spiritual world, such as feelings, emotions.



An Interesting Notion:
R & D effort is proportional to path length.

2.3.5.4. An alternative view for the future of machine technology

To new comers, one may ask the following question: Why would one choose to take more effort in transferring at a higher language hierarchy? Many MT gurus will provide the following reasons.

1. To resolve natural language ambiguities in order to achieve higher accuracy of translation.

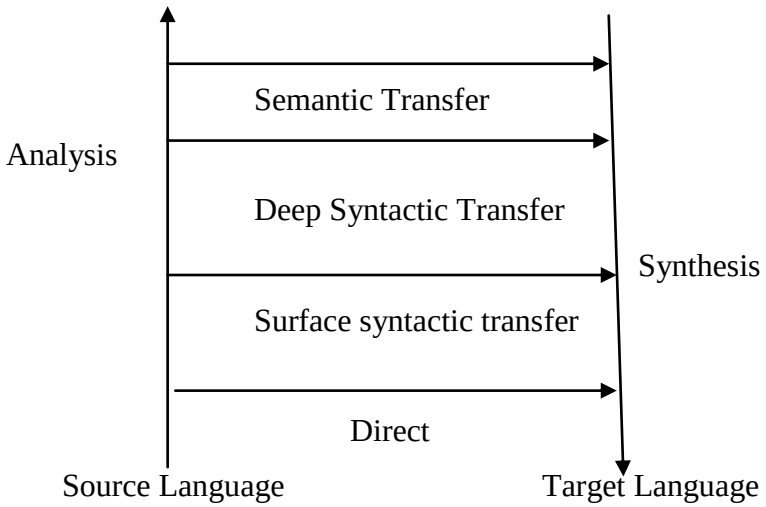
2. To increase the shared components (analysis and synthesis) and reduce the non-shared components (transfer) between pair of languages.

For some language pairs which are linguistically quite far apart, higher level of language hierarchy is a necessity to achieve a good degree of translation. This also explains why in Japan, through there were as much MT R&D effort as the rest of the world but widely used commercial MT systems are relatively fewer than the Romanized language pairs. On the other hand, most of the practitioners are aware that there is a penalty to pay when going up the language hierarchy in the stages of analysis: the potential of introducing errors. A better strategy is "transfer at the right level": does analysis to a level of just enough information for a successful transfer. Of course, the right level of analysis depends on individual sentences, and it varies substantially between language pairs. A diagram to reflect this philosophy is a Ladder. It has the following characteristics.

1. Similar effort at each level of transfer: If it takes too much effort at a lower level for transfer, then one should escalate to a higher level of analysis.

2. Application of machine learning technology: Be it Neural Network or Case Based Reasoning, the AI technology emerged in the last decade have a common trait-learning capability. Learning capability is essential in narrowing the gap of the ladder.

An alternative view for the future of MT technology



Some possibilities: Transform whenever is appropriate. Apply machine-learning technology in narrowing the gaps.

2.3.5.6. Future of machine translation technology

For MT system to be successful by adapting the Ladder philosophy, one has to develop MT technology in the following aspects.

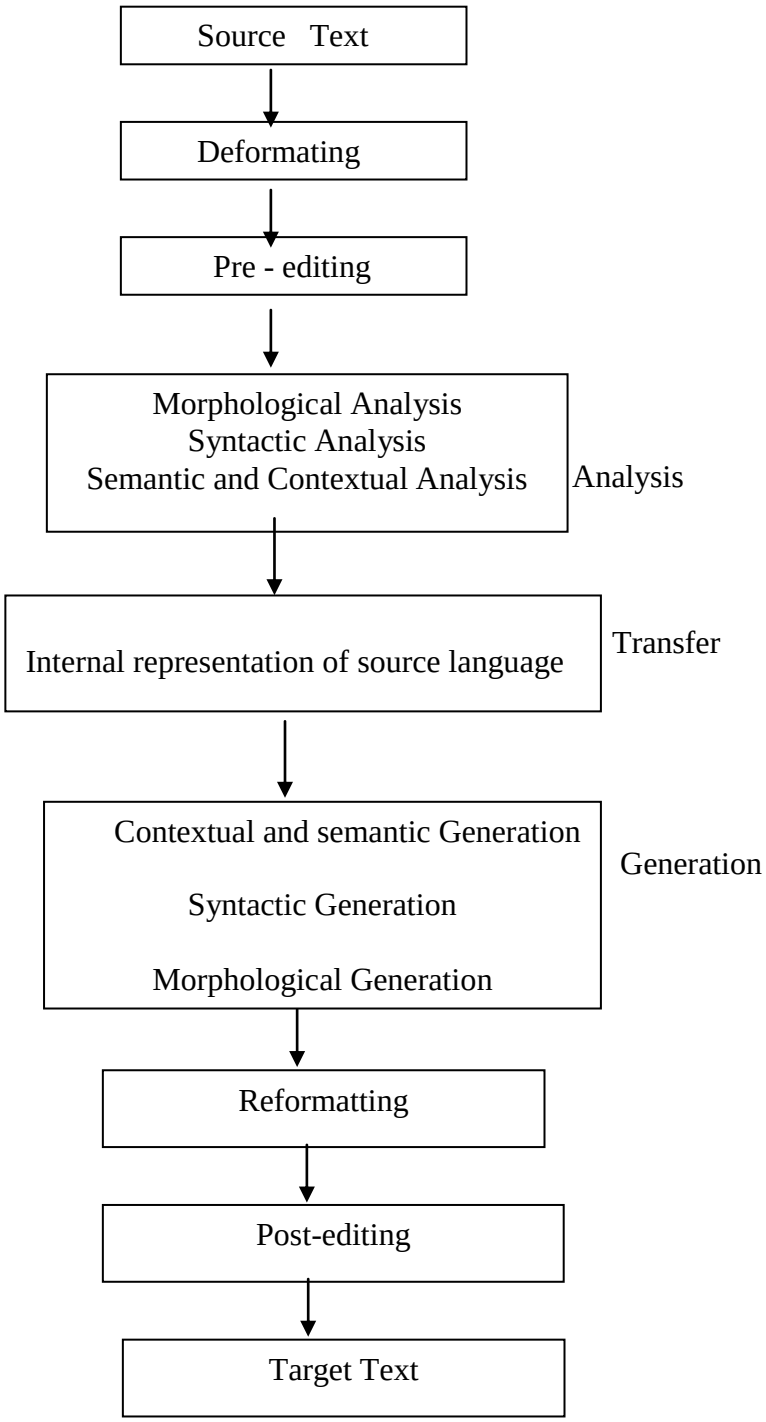
1. Able to determine what is the right level to transform the resultant of source language analysis to that of target language.

2. Able to minimize the effort in developing each of the transfer components.

Previous transformation techniques, such as pattern matching for the direct approach, rule driven transformation for the transfer approach and even unification based interlingual approach, do not have the above two characteristics. Neural Network Paradigm could be a good substitute at lower levels and Case Based Reasoning could be appropriate for transferring at higher hierarchies.

2.4. A brief discussion on a typical machine translation process

A typical MT process is shown below.



2.4.1. Text input

The first module in any MT systems is Text Input of source language. If machine-readable test in source language is available, the process can be started by inserting a

floppy disc. But if printed pages are to be input, either manual typing or optical character reader (OCR) is to be used. In manual typing speed and the cost of typists are to be accounted for. In case of OCR proof reading and error correction by human are to be managed.

It is possible to classify the sentence categories by the degree of difficulty of translation. Sentences that express facts alone are very clear for machines to be understood and translated. Sentences which include time relations, expectations, assumptions, conditions are the next difficult category. Then come the sentences that include speaker's intention and mental state. These are very difficult to translate for a machine because interpretation requires discourse analysis. Present day system translates sentences one by one independently. They do not have the ability to see the inter-relationship among adjacent sentences. Hence translation of sentences that required contextual information is imperfect.

Another factor, which affects the degree of difficulty to the highest, is the world knowledge, everyday life knowledge or common sense knowledge. As an example "fish eats cat" would be a perfect translation grammatically, syntactically and semantically. But the everyday life knowledge would have it marked as a wrong translation and would be corrected at the post editing stage as "cat eats fish". There are many sentences, which include metaphor and culture specific expressions. Current MT systems do not know how to handle them.

2.4.2. Deformating and reformating

An operative machine translation system is expected to do much more than simply translate individual sentences. Most of the texts, which need translation quickly, for example, technical documentation is heavily formatted. In some texts major portion on a page may be non-translation material in the form of figures, flow charts or tables. Therefore, specific modules have to be built into the MT system, which will identify text portion to be translated and generate a template of that page. The individual translation units, usually sentences are automatically recognised and numbered consecutively; but in the case of head lines or table entries, single word or phrases are automatically recognised and numbered consecutively. These are written into a text file and transferred for

translation. After translation the file containing the target language text units is returned to the user. This text has now to be reformatted after making appropriate correction (post editing) etc. This reformatting step takes care of ensuring that the target language text is available with same layout as original including figures, flow charts, tables etc.

2.4.3. Pre-editing and post editing

At times, segmentation of long sentences into two or more short sentences is also required which is often done manually at the pre-editing stage. Pre-editing and post-editing have certain corrections. When a heavy or elaborate pre-editing is performed, very simple post editing may be sufficient and vice-versa. Post editing is generally unavoidable and hence many machine translation users do only post editing. It is essential to avoid ambiguities and also to improve the quality and style of translation. There may be words unknown to the system and difficult to analyse. In such cases post editing provides a facility to update the system lexicon. Post editing the machine output is not the same as revising a "human" translation. While the machine will make severe errors in syntax, human translation will make fewer but random errors, which are less predictable.

It is reported after a maid in poll conducted by Word Perfect magazine in June 1993 of the MT software now available on PCs, that the pre-editing is basically division of long sentences into shorter ones, fixing up punctuation marks and blocking material that does not require translation. Hence not much is spent on it. Some users of Japanese to English system however reported those pre-editing takes about 40% of total translation time. On the other hand the poll reports that post-editing generally, accounts for larger share of production time and also the cost. Some language combinations are reported to give better results and consequently require lessor post-editing. There is also another important factor, which require consideration at the time of post editing and that is the quality of expected output. A few may require very high quality output, e.g. insurance contracts. Some others may require editing for accuracy but not for style. Yet others may require "information only" for "understanding only" and much time may not be spent on post-editing.

The state of the art in computational linguistics does not permit the perfect translation of random texts. Therefore, if a text is translated with an aim of publication, post editing by human translation will remain a necessity, even if a system is tuned for specific subject area. The quality of translation does not hinge only on MT system but is equally dependent on the quality of source texts. One also has to consider intended purpose of text, expectations of readers and even stylistic preferences of post editor.

Therefore, the introduction of MT system into an existing organisation, whether it is a large company or a translation bureau, requires several steps. First, purpose of translation usage must be clearly established. Then kinds of documents must be specified and the expected quality, speed and cost must be clarified. In-appropriate use is likely to lead to frustration. For productive use of MT system, an initial turning period of about two weeks will be necessary. At least two specialists, one for pre editing and others for post editing will have to be assigned. They are required to have some background in linguistics or languages which the machine will translate. They must be trained for operations such as pre editing, post editing, dictionary changes and enhancements. Sentential styles of input and output documents must be carefully studied and translation equivalents must be determined. The documents must be translated by trial basis for sufficient volume and the dictionary and grammar must be tuned to the environment. Second training for about a week after a few months of trial translations may be beneficial as it can answer questions which had arisen during actual application.

2.4.4. Analysis, transfer and generation

Morphological analysis determines the word form including inflections, tense, number, part of speech and so on. Syntactic analysis determines which word is the subject which one is the object and so on. Semantic and contextual analysis determines a proper interpretation of a sentence from plural results produced by the syntactic analysis. Syntactic and semantic analysis is very often a combined operation and is executed simultaneously to produce syntactic tree structure and semantic network. The result is an internal representation of a sentence. The internal representation of the target language is often the same as that of source language, but sometimes the change of internal representation is required. The sentence generation phase is just the reverse of the analyzing process.

2.4.4.1. Morphological analysis and generation

Computational morphology deals with the recognition, analysis and generation of words. Most regular and productive morphological process across languages is inflection, while other aspects such as derivation, affixes and combining forms etc. are also included. In many languages noun and adjectives vary according to numbers, gender and case. Inflection alters the form of the word in number, gender, mood, tense, aspect, person and case. Similarly the verbs also take different forms depending upon person, tense etc. A morphological analyser or generator supplies information concerning morphosyntactic properties of the words it analyses or constructs. In principle, there are two ways to deal with morphologically related forms. One is to store all the word forms with associated relevant properties. For example, *walk* (verb present plural), *walks* (verb present singular) *walking* (verb present progressive) and *walked* (verb past). The other way is to store one base form *walk* (verb) with rules to relate variants. These options will have to be chosen depending upon how expensive the storage will be. Further, languages are creative and hence new words enter the language. So storing all variants is likely to become an intractable proposition.

2.4.4.2. Syntactic analysis and generation

If words are the foundation of speech and language processing, syntax is the skeleton. Syntax is the study of relationship between words. Here we are bothered about how words are clustered into classes called parts-of-speech, how they group their neigbours into phrases, and the way in which words depends on other words in a sentence.

2.4.4.2.1. Grammar formalism

A syntactic analyzer or generator presupposes a grammar formalism. The grammar formalism so far proposed by the researches include the following:

1. Phrase Structure Grammar (PSG)
2. Dependency Grammar
3. Case Grammar

4. Systematic Grammar
5. Montague Grammar

There are quite a few variants of PSG. They are:

1. Context Free PSG
2. Context Sensitive PSG
3. Augmented Transition Network Grammar (ATN)
4. Definite Clause (DC) Grammar
5. Categorical Grammar
6. Lexical Functional Grammar (LFG)
7. Generalised PSG
8. Head Driven PSG
9. Tree Adjoining Grammar (TAG)

Which grammar would suit a particular language depends on many factors specific to that language. For example, PSG has a serious problem in the analysis of sentences in Japanese. On the other hand Dependency Grammar has been very popular for Japanese but its draw back comes out clearly in disambiguation. Case grammar offers certain advantage as sentence representation is done by case frames. Advantage is that, a sentence in different languages that expresses same contents may have the same case frames. Due to this advantage many MT systems seem to have adopted it for sentence analysis and also for sentence generation. However, the difficulty arises in a situation where different usages of same verb or noun have to be distinguished. And if in a language such usage is large, the number of semantic markers also becomes large. A sentence includes lot of information such as syntactic, semantic, textual, and interpersonal and so on. Grammar formalisms are just a framework to explain basic structure of a language and any one-grammar formalism may not apply across the languages.

2.4.4.2.2. Electronic dictionaries

In a typical machine translation system, dictionary is one of the components in the central portion. This implies monolingual/bilingual/multilingual, machine-readable dictionaries for a particular pair or pairs of languages, which the machine is required to

translate. The dictionaries provide definitions of words, their syntactic categories and at times usage by way of examples. They are, however, a poor source of much needed information for sophisticated semantic processing, and i.e. how a word is used in relation to others in a sentence.

The electronic dictionary is not simply a machine-readable dictionary; it is a dictionary containing all the information necessary for computers to understand natural languages. Thus an electronic dictionary must contain meanings of words, i.e. concepts expressed by words, their grammatical characteristics when they express concepts, and knowledge necessary for understanding concepts. Large-scale electronic dictionaries are being developed for machine translations in each of the MT projects currently under way at several places. Small-scale electronic dictionaries are used for question answering and speech recognition systems.

2.4.4.2.3. Parsing and tagging

In the first place, it is often useful to divide the analysis into two stages. They involve the identification of the linguistic properties of the individual words, followed by the assessment of the functions of the words in relation to each other. The first stage is often called tagging, and the second stage parsing.

The information attached to the individual words during the tagging process is usually its word class or the parts of speech that it represents. First of all, the words need to be divided into individual words.

This
Study
Will
Touch
On
A
Variety
Of
Topics

In syntactic
Theory
And
English
Syntax
.

For each of these items, word class information can now be allocated. The simplest source of this information is probably the entry in a dictionary for each word, and following word classes have been established using the grammar codes in a dictionary.

This - DETERMINER
Study - NOUN
Will – MODAL AUXILIARY VERB
Touch - VERB
On - PREPOSITION
A - DETERMINER, ARTICLE
Variety - NOUN
Of - PREPOSITION
Topics - NOUN
In - PREPOSITION
syntactic - ADJECTIVE
Theory - NOUN
And - COORDINAOR
English - NOUN
Syntax - NOUN
. - PUNCTUATION

Based on the formalism we have chosen for the syntactic analysis the tagged corpus can be further analysed. If select a context-free grammar with phrase structure model, the word words have to be groped into phrases, phrases into classes and classes into sentences. The analysis will have to be given in a parsed trees.

2.4.4.3. Semantic and contextual analysis and generation

Semantic analysis is the process whereby meaning representations are composed and assigned to linguistic inputs. The semantic analysers that make use of static knowledge form the lexicon and grammar can create context-independent literal, or conventional, meanings. The principle of compositionality states that the meaning of a sentence can be composed from the meanings of its parts. Among the source of knowledge that are typically used are the meanings of words, the meanings associated with grammatical structures, knowledge about the context in which the discourse is occurring, and common-sense knowledge about the topic at hand.

There are a number of computational approaches to the problem of semantic analysis. In syntax-driven semantic analysis, the parts are the syntactic constituents on an input. The syntax-driven semantic analysis is fairly limited in scope. It assigns representation to input based solely on static knowledge form the lexicon and the grammar. In this approach, when we refer to an input's meaning, or meaning representation, we have in mind an impoverished representation that is both context independent and inference free. Meaning representations of this type correspond to the notion of a literal meaning. Practical semantic analysis systems adapt the strictly compositional approach in a number of ways.

Word sense disambiguation systems assign word tokens in context to one of pre-specified set of senses. Selectional restriction-based approach can be used to disambiguate both predicate and arguments, but require considerable information about semantic roles restrictions and hierarchical type information about role fillers. Semantic selectional restrictions allow lexemes to post constraints on the semantic properties of the constituents that accompany them in a sentence. Machine readable dictionaries facilitate the creation of broad-coverage sense disambiguators.

2.5. Some problems in machine translation

The following are the important problems encountered by MT practitioners:

1. For the purpose of translation, language was considered just a bunch of words and the primary task for early MT was to build machine large enough to hold all the words necessary in the translation process.

2. Words in one language have no counterparts in another and that in some case one word in one language has to be expressed by a group of words in another. For example, two given language may have completely different structures.

   Ex. SOV vs SVO structures

3. Sometimes there exists between languages a lack of one-to-one correspondence of what is known as "parts of speech". For example the colour terms in Tamil are nouns whereas in English they are adjectives.
4. The ways the sentences are put together in languages also differ greatly even among genetically related languages.
5. The MT researchers are confronted by semantics – the fact that words have more than one meaning and sometimes group of words or even whole sentence may have more than one meaning in a language.

   Ex.

   ndaTa = walk, happen

   keeL = ask, hear

   utir, vizhu = fall

   old men and women

   vayataana aaNkaLum peNkaLum

   vayataana aaNkaLum vayataana peNkaLum

   Flying planes are dangerous

   paRakkum vimaanangkaL apaayakaramaanavai

   vimaanangkaLai paRakka viTuvatu apaayamaanatu

6. Generally speaking, all the translation problems, that were not solved by applying values of grammar were lumped together under the heading "semantics" with the indication that since they were difficult theoretical problems they were to be solved by various devises.
7. Computer cannot predict meaning. This puts MT at a disadvantage with respect to each of the three requirements for a good human translator.
8. With respect to knowledge field up to now no one has been able to build into computer knowledge of a technical field in the same way as a human specialist would have.

9. As to the command of human language, native and foreign, it involves not only vocabulary and grammar but also a whole encyclopaedia of past experience of the individual and the race.
10. Human can accept both written and spoken text for translation. But for the computer, at least, till now, input should be in the written or recorded form.
11. Even this form of input has provided sufficient number of challenge for the computer, for instance the resolution of ambiguities.
12. Computer should be capable of handling bilingual text so that the difference in script does not hinder the translation process.
13. As MT involves language one must know much more about language.
14. One must understand the rules under which such a complex system as human language operates and how the mechanism of this operation can be simulated by automatic means.
15. The simulation of human language behaviour by automatic means is almost impossible to achieve, since language is an open and dynamic system in constant change and because the operation of the system is not yet completely understood.
16. It becomes clear therefore that the best possible solution for MT both theoretically is symbiosis between man and machine.

2.6. Future of machine translation

Commercial systems became available in Japan from about 1979 and few reports are available from the users about their efficacy. These systems are mainly for the languages pair English-Japanese and vice versa. These reports indicate that there is 30% decrease of translation costs by machine as against human translators. Speed up of 30% on the overall translation time has also been reported. Translation costs depends heavily on how much post editing is required. They are found to be proportional to the post editing time. A volume of 2000 pages per year is found to be break-even point for profit making by machine translation.

Another study by the commission of European community SYSTRAN System reports productivity increase by about 300%, speed up by about 500% and cost reduction by about 50%. It must be noted here that SYSTRAN was put into operation in 1977 and

adapted there after at many installations. It has also undergone several cycles of improvement.

With the increasing interest in NLP and MT all over the world, there will be continuous improvements in the existing systems with a view to make them more robust and easily adaptable to the needs of the users. Certain areas have been already identified by the researches in these directions. These are enumerated below:

1. Development of dictionaries and lexical databases using corpora: Methods for producing dictionaries even from untagged texts have been presented in seminars and conferences. Lexical databases are being prepared by organisations, such as Microsoft Corporation, USA, Institute of Machine Translation at the University of Stuttgart etc.

2. MT for specialised applications: Large corporations with multinational operations are devoting considerable efforts to develop MT systems for in house use in specific domains. Examples are "Simplified English" developed and being used by Boeing Corporation for translation of maintenance manuals of Boeing aircrafts. General Motors are also working in developing similar systems.

3. MT with human intervention: This is a paradigm shift with realistic attitude which is gaining ground. It was a dominant theme at the conference "Language Technology 2000" held in Germany in 1993.

4. MT on Network: Availability of MT software on a network appears to be a distinct reality in near future.

5. Information retrieval: Some researches have suggested that MT should be introduced in the information retrieval systems and data base systems so that users all over the world can have access to any information source.

2.7. Summary

Machine translation is a very important application of NLP. The attempts to machine translation can be seen at least as three generations, the first representing direct approach, the second generation representing transfer approach and the third generation representing interlingual approach. There is a tendency recently to replace rule-based approach by example-based approach.

Although MT system exploits many standard language-processing techniques, there are also some MT specific ones, including notably syntactic transformations. We have seen four models for MT, the transfer, interlingua, direct, and statistical approaches. Practical MT system today, however, typically combines ideas from several of these models, while MT research systems are probing other niches in the design space. MT system is hard work, requiring careful selection of models and algorithms and combination into a useful system. Today this is more a craft than a science, especially since this must be done while minimizing development cost. While MT system design today is thus fairly ad hoc, there are ongoing efforts to develop useful formal models of translation. While the possibilities for improvement for MT is truly impressive, the output of today's systems is acceptable for rough translations, for information-acquisition purposes, draft translations intended to be post-edited by a human translator and translation for sub language domains. As for many software tasks, user interface issues in MT are crucial: the value of MT systems to users is not directly related to the sophistication of their algorithms or representations, or even necessarily to output quality. Despite half a century of research, MT is far from solved. Human language is a rich and fascinating area whose treasures have only begun to be explored.

CHAPTER 3

ARCHITECTURE OF SENTENCE BUILDING MECHANISM IN ENGLISH

3.0. Introduction

This chapter is intended to capture the architecture of sentence building mechanism in English. The rules involved in the building of English sentences will be identified so as to compare the rules involved in building Tamil sentences and thereby to understand the intricacies involved in the transfer of the source language structure into the target language structure. For the sake of parsing the text in the target language, it is proposed to do the following processes:

1. To analyse the words by assigning them to the word class and giving them lexical, functional, inflectional and derivational meaning depending on the nature of the words.
2. To build phrases from words
3. To build clauses from phrases
4. To build sentences form phrases and clauses
5. To identify the type of sentences

For the sake of computation, the building of sentences in English has been dealt under the following headings:

1. Word building Mechanism
2. Phrase building Mechanism
3. Clause building Mechanism
4. Sentence Building Mechanism

3.1. Word building mechanism

The following form classes have been identified:

1. Noun
2. Verb
3. Adjectives
4. Adverbs

The following functional classes have been identified:

1. Pronouns
2. Prepositions

3. Determiners (Articles, Ordinals, Quantifiers, Demonstratives)
4. Conjunctions (Coordinating conjunctions & Subordinating conjunctions)
5. Auxiliary verbs (Primary auxiliaries & Modal auxiliary)

The word processor will analyse the words by assigning them to the word class and giving them lexical, functional, inflectional and derivational meaning depending on the nature of the word. 'Dictionary of English word analysis' (DEWA) build for the purpose of parsing is referred to gather the above said information.

3.2. Phrase building mechanism

The mechanism of building the following types of phrases are dealt under this head.

1. Building of noun phrases
2. Building of verb phrases
3. Building of adjectival phrases
4. Building of adverbial phrases
5. Building of prepositional phrases

3.2.1. Building of noun phrases

The constructions into which nouns most commonly enter, and of which they are the headword, are generally called noun phrase (NP) or 'nominal groups'. The structure of a noun phrase consists minimally of the noun (or noun substitute, such as pronoun). The constructions preceding and following the noun are often described under the headings of premodification and post-modification respectively.

3.2.1.1. Constituents of noun phrases

An NP may consist of a single noun, pronoun, demonstrative pronoun, etc.

ex.

John is lazy. - *John* is a noun

He may come now. - *he* is a pronoun

These are flowers. - *these* is a demonstrative pronoun

The noun in an NP may be preceded by the following items: determiners, ordinals, quantifiers, adjectival phrase, classifier and predeterminers. Thus an NP can be parsed as follows:

NP ↔ Pre-det + Det + Ord + Quant + Adj. P + Class + N

The following table shows these categories, the items to be included in each of them along with their distribution.

Category	**Items**	**Distribution**	**Example**
Determiners	1. Article: *a/an, the* 2. Demonstrative pronouns: *this, that, these, those* 3. Possessive pronouns: *his, her, their,* 4. Interrogative pronouns: *whose* 4. Wh-words: *what, which*	They precede nouns. NP ↔ Det + N	the table *a* book this book his book whose book
Ordinals	*First, second, third,* etc. which denote the order of the items in a series are called ordinals.	In an NP, determiners can be followed by ordinals. NP ↔ Det + Ord + N	the first class his third son

Category	Items	Distribution	Example
Quantifiers	Quantifiers specify quantity or number: *several, a few, one, two, many,* etc.	In an NP, the ordinals can be followed by the quantifier. If there is no ordinal, the determiner is followed by the quantifier. NP ↔ Det + Ord + Quan + N	*The first three* songs *his many* mistakes
Approximates (App.)	*approximately, nearly, almost, etc.*	Numeral quantifiers can be approximated by approximates. Nu-quan. P ↔ App + Nu-quan	Nearly hundred books have been sold. Approximately five boys came yesterday.
Limitizers (Limit)	*Only*	Occurs before quantifier to limit the quantity. Nu-quan P ↔ Limit + Nu-quan	Only five boys came to see me. *Only* Uma appeared before the interview.
Adjectival phrase	Adjectival phrase is phrase that functions as an adjective.	A noun can be modified by an adjective phrase. NP ↔ Adj. P + N	a very nice lady many beautiful *carved* figures
Classifier	A classifier is a noun or a sentence that functions as an adjective.	A classifier too can comes before a noun to modify it. NP ↔ Class + N	*arts* College *the do or die* slogans
Predeterminers	*like, half of, all, all*	Predeterminers or	*half* of a dozen

Category	Items	Distribution	Example
	of.	pre-articles are those items, which precedes the determiner in an NP. NP ↔ Pre-det + Det + N	*all* my sons *all the* boys

Genitive observes the arrangement of relative clause with regard to their head; a considerable number of genitive constructions in contemporary English do, follow their head.

The lap of her sister.

her sister's lap.

If genitive, however, are proper nouns, particularly single names, they often precede their head.

John's house.

Yet even single names are often postposed.

house of John.

The current status of the genitive in English reflects a change form OV order to VO order. While the favoured order for genitives has been shifted, adjectives still predominantly precede the modified noun.

large blue eyes.

Only when they are in turn modified do descriptive adjectives regularly follow their head.

They rested on a rock conveniently low.

Limiting adjectives – articles and demonstratives – also stand before nouns, as do numerals; they usually precede descriptive adjectives.

I could not hear him at that distance.

I haven't sent the two persons.

I jumped over the first of the six benches.

Parallel to the order of limiting adjectives is that of multiplying numeral combination with nouns representing higher entities: millions, thousands, hundreds, tens in the order of higher to lower (preceded by the simple numerals).

Four thousand two hundred and seven.

As with preposed descriptive adjectives, genitives, and relative clauses, preposed limiting adjectives and the cited numerals combinations reflect OV structure. This is the most conservative of the English modifying patterns. In maintaining it as a relic pattern, English provides evidence for the OV structure which posited for its ancestor language. Yet English nominal phrases for the most part observe the canonical order of SVO languages, maintaining form early stages OV order only with adjectives and numeral constructions other than the teens.

3.2.1.2. Patterns of noun phrases

The table below shows the different types of NP patterns.

Sub types	**Pattern**	**Example**
1	NP + PP ↔ NP	the rebellion of the people the man of the match
3.	NP + Relative Clause ↔ NP	the man who painted the wall the boy who won the prize
4.	Complement clause ↔ NP	that he is generous
5a.	NP + to-infinitive Clause ↔ NP	attempt to climb
5b.	NP + to-infinitive Clause ↔ NP	his anxiety to go
5c.	NP + to-infinitive Clause ↔ NP	the house to live in
6	NP + (Preposition) + Interrogative clause ↔ NP	the mystery (of) why she left the knowledge of how to do it
7	NP + that-clause ↔ NP	the news that she left
8	Det + Compound noun ↔ NP	a film star my ink pen

3.2.2. Building of verb phrases

The verb phrase consists of a verb as its head. The term verb phrase is used in two senses. Traditionally, it refers to a group of verbs that together have the same syntactic function as a single verb.

ex.
is coming
may be coming
get up

In such phrases (verbal groups, verbal clusters), one verb is the main verb (the lexical verb) and the others are subordinate to it (auxiliary verb, catenative verbs). A verb followed by a non-verbal particle is generally referred to as a phrasal verb. In generative grammar, the VP has a much broader definition, being equivalent to the whole of the predicate of a sentence, as is clear from the expansion of S as NP + VP in phrase structure grammar. As the parsing technique we are adopting is based on phrase structure analysis we take the second approach to VP. According to the second point of view, all the elements except the subject NP constitute VP.

3.2.2.1. Constituents of verb phrases

The constituents which come under VP i.e. that are headed by V can be listed as follows:

Type of phrase	**Structure**	**Example**
Adverbial phrase	V + Adv ↔ VP	He came very fast
Noun phrase (s)	V + NP + NP ↔VP	He gave her a book
Prepositional phrase(s)	V + PP ↔VP	He fell down from the tree
to-infinitive clause	V + to-infinitive clause ↔VP	He wanted to buy a computer.
That-clause	V + that-clause ↔VP	He said that he would come home at 6 o' clock.

3.2.2.2. Typology of verbs

The verbs need to be distinguished into two types:

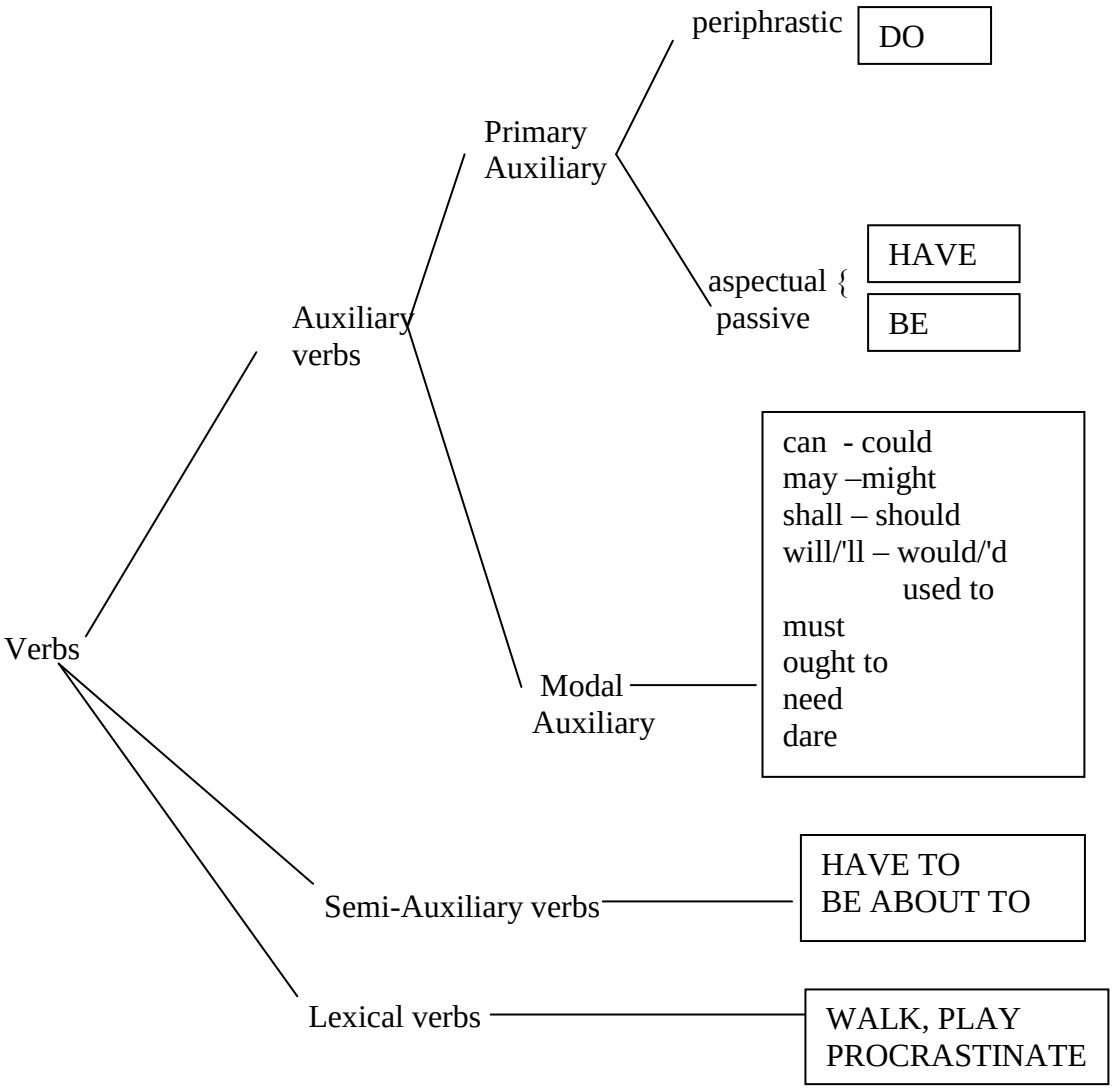
1. Lexical verbs

ex. walk, go, run etc.

2. Auxiliary verb

will, can, may etc.

The verb that carries the major sense of the predicate phrase is called lexical verb and the verbs that carry secondary meaning such as tense, mood and aspects are called auxiliary verbs. The following diagram shows the typology of verbs (adopted from Quirk et al (1972:69):



3.2.2.3. Inflections in verbs

A typical lexical verb has five forms. The DEWA gives the five forms for each verb. The following table shows the five forms and their symbols and functions with examples:

Form	**Symbol**	**Example**	**Functions**
Base	V/V1	call drink put	1. All the present tense except 3rd person singular: ex. I/You/we/they call 2. Imperative: ex. Call at once! 3. Subjunctive ex. He demanded that I call him. 4.Infinitive: 4.1.the bare infinitive: ex. He may call. 4.2. To infinitive: ex. He wants her to call.
S form (3rd person singular present)	V-s/V1s	calls drinks puts	3rd person singular present tense ex. He/she/it calls.
Past	V-ed1/V2	called drank put	***Past tense*** ex. He called yesterday.
ing particle(present participle)	V-ing/V4	calling Drinking Putting	***Progressive aspect*** (BE + V-ing): ex. He's calling you. 2. Non-finite ing – clause: He's calling a spade.
ed participle (past participle)	V-ed2/V3	called drunk put	***Perfective aspect*** (HAVE + V-ed2): He has drunk the water. **Passive voice** (BE+V-ed2): He is called.

3.2.2.4. Compounding of verbs

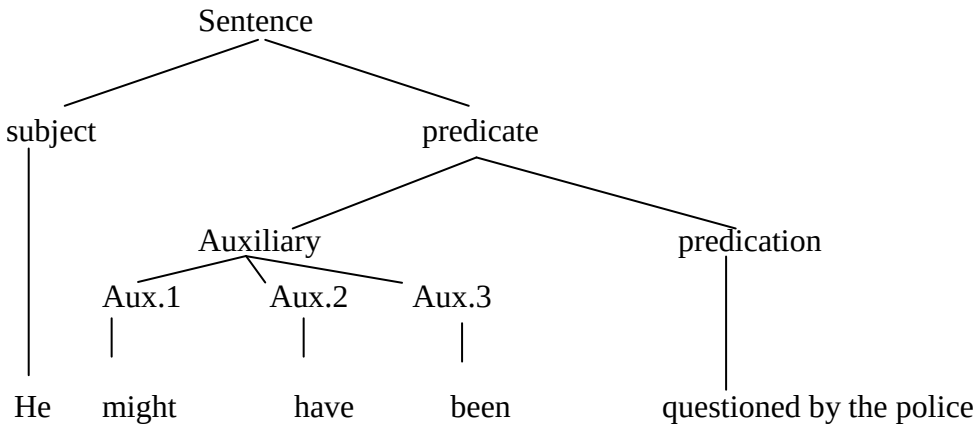
The auxiliary verbs are compounded with lexical verbs to bring different shades of meaning to the verb.

Auxiliary verbs, as their name implies, are helping verbs. They do not have independent existence as verb phrases, but only help to make up verb phrases, which consist of one or more verbs, one of which is a lexical verb. The auxiliary verb makes different contributions to the verb phrase. For example, *DO* is only an empty carrier in certain sentence processes, whereas *BE* and *HAVE* contribute aspect, and modal auxiliaries contribute modality (expressing speech concepts such as volition, probability, and insistence).

Although the auxiliaries have different functions in the verb phrase, they have one important syntactic function in common when they occur initially in the finite verb phrase:

Will he ask any questions?
Is he asking any questions?
Has he asked any questions?

The auxiliary of the verb is isolated from the rest of the predicate no matter how the verb phrase is. For this purely syntactic function of the auxiliaries, they can be called by a generic term ‘operator’.



Based on the syntactic function and semantic distinction the auxiliary verbs have to be classified into three types:

Primary auxiliary verbs

Modal auxiliary verbs

Semi auxiliary verbs

3.2.2.4.1. Compounding of primary auxiliary verbs

The auxiliary verbs *do, have* and *be* and their different manifestations based on tense, person and number are termed primary auxiliary verbs. The primary auxiliary verbs are inflected for tense, person and number they show concord with the subject. The primary auxiliary verbs can be further classified into the following three types:

1. *Do* auxiliary verbs
2. *Have* auxiliary verbs
3. *BE* auxiliary verbs

3.2.2.4.1.1. Compounding of DO auxiliaries

DO auxiliaries are otherwise called periphrastic auxiliaries. *DO* is the most neutral or 'auxiliary like' of all auxiliaries. It has no individual meaning but serve as a 'dummy operator' in certain sentence processes. The auxiliary *DO* has the following forms:

Tense	**Non-negative**	**Uncontracted negative**	**Contracted negative**
Present	do does	do not does not	don't doesn't
Past	Did	did not	didn't

The following table shows the different functions of *Do* as an auxiliary verb:

Pattern	**Function**	**Example**
DO-n't + V1	*DO* is used to form the negative of the present and past simple tense.	She doesn't sleep. She didn't sleep.
DO…V1?	*DO* is used to form the	Does she sleep?

	interrogative of the present and past simple tense (i.e. question tags)	Did she sleep? Didn’t she?
DO + V1	*DO* + V1 can be used in the affirmative to give emphasis.	You think I didn't play, but I did play. I do assure that I will persuade him.
DO so DO-n’t DO	*DO* is used as a pro-verb to avoid repetition of a lexical verb in short agreements and disagreements.	He speaks a lot. Yes, he does so. You eat too much. No, I don't. Shall I write to him? Yes, do.
and so DO…	*Do* is used as pro-verb to avoid repetition of lexical verb in a sentence	She likes sweets and so does her brother.
…DO	*Do* is used as a pro-verb in comparisons to avoid repetition.	I sing better than he does.
DO V1-imperative	*Do* is placed before imperative to make a persuasive request or invitation.	Do attend the meeting. Please do come

3.2.2.4.1.2. Compounding of HAVE auxiliaries

The *HAVE* auxiliaries are otherwise called aspect auxiliaries. The aspect auxiliary *HAVE* combines with past participle to form perfective complex verb phrase. *HAVE* has the following forms:

Type	**Non-negative**	**Uncontracted negative**	**Contracted negative**
Base	have, 've	Have not, 've not	haven't
s- form	has, 's	has not, 's not	hasn't
ing-form	having	not having	
ed-form	had (only as a lexical verb)		

The following table shows the different distributions and functions of HAVE as an auxiliary verb:

Pattern	**Function**	**Example**
HAVE + past participle form of the main verb (V3)	1. has/have + V3 expresses present perfect 2. had + V3 expresses past perfect 3. will/shall + have + V3 expresses future perfect 4. would/should + have + V3 expresses perfect conditional	She has gone. She had gone. She will/shall have gone. She would/should have gone.
HAVE + NP [O] + V3	Express the idea of employing some one to get something done for you.	I had my clothes washed.
had better + to-infinitive clause	Expresses an unreal past	You had better agree to the proposal.
HAVE + NP [O] + V-ing-clause	1. Will/shall…have…V-ing expresses future time 2. Has/have … V-ing expresses present time. 3. had … V-ing expresses past time.	I 'll have you singing the songs in two days. He had the child playing around him by evening.
HAVE + to-infinitive clause	Expresses obligation in the affirmative and absence of obligation in the negative.	I have to arrange the books in the shelves. You don't have to work hard.

3.2.2.4.1.3. Compounding of BE auxiliaries

BE is unique among verbs in having eight different forms:

		Non negative forms	**Uncontracted negative forms**	**Contracted negative forms**
Base	Be			
Present	1st person singular present	am, 'm	am, 'm not	(aren't, ain't)
	3rd person singular present	is, 's	is not, 's not	isn't
	2nd person present, 1st and 3rd person plural present	are, 're	are not, 're not	aren't
Past	1st and 3rd person singular past	was	was not	wasn't
	2nd person past, 1st and 3rd person plural past	were	were not	weren't
ing-form	being		not being	
ed-participle	Been		not been	

Based on the function *BE* auxiliaries can be classified into two:

1. Aspect auxiliary
2. Passive auxiliary

The following table shows the different distributions and functions of *BE* as auxiliary verbs:

Pattern	**Function**	**Example**
BE + V-ing	Expresses continuous aspect	She is eating.

BE + V3	Express passive voice	He was tamed.
BE + infinitive-clause	Conveys orders and plan.	He is to lead the team. They are to attend the function tomorrow
was/were + infinitive clause	Express an idea of destiny	He was to undertake a great responsibility.
BE about + infinitive clause	Express immediate future	We are about to start. She was about to sing.

3.2.2.4.2. Compounding of modal auxiliary verbs

The modal auxiliary verbs and their alternative forms are given in the following table:

Non-negative forms	**Uncontracted negative forms**	**Contracted negative forms**
Can	cannot, can not	Can't
Could	could not	couldn't
May	May not	(mayn't)
Might	might not	mightn't
Shall	shall not	shan't
Should	should not	shouldn't
Will	Will not	won't
'll	'll not	
Would	would not	wouldn't
'd	'd not	
Must	must not	mustn't
Ought to	ought not to	oughtn't to
used to	used not to	usedn't to (didn't use to)
(need)	need not	needn't
(dare)	dare not	(daren't)

The following table shows the different functions of modal auxiliary verbs.

Modal auxiliary verb	**Functions**	**Examples**
Can	Ability = able to	He can speak Tamil.
"	Permission = be allowed to	Can I smoke here?
"	Theoretical Possibility	Anybody can do it.

Modal auxiliary verb	**Functions**	**Examples**
Could	Past ability	I never could play cricket.
"	Present or future permission	Could I visit my parents?
"	Present possibility	We could go to college.
"	Contingent possibility or ability in unreal condition	If we had more money, we could have bought the car.
May	Permission = be allowed to	You may go if you want.
"	Possibility (unusually factual)	You may get admission.
Might	Permission (rare)	Might I sit here?
"	Possibility (theoretical or factual)	We might go to cinema.
Shall	Willingness on the part of the speaker in 2nd and 3rd person.	He shall get what he requires.
"	Intention on the part of the speaker, only in 1st person.	We shall tell you our opinion later.
"	Insistence	You shall obey the rules.
"	Legal and quasi injunction	The renter shall maintain the house in good condition.
Should	Obligation and logical necessity (ought to)	He should do as he is instructed.
"	Contingent use in the main clause (= would)	We should love to do that work.
"	In rather formal real condition	If you should decide to quit the job, please let us know.
Will	Willingness (used in polite request)	Will you please lend me the book?
"	Intention (usually contracted 'll)	I'll go to college as soon as I can.
"	Insistence (stressed, hence not contracted)	He will finish it, whatever be the obstacles.
"	Prediction	The play will be over at 5

Modal auxiliary verb	Functions	Examples
		o'clock. The stone will sink in water.
Would	Willingness	Would you excuse me?
"	Insistence	It's your own choice, you would do it.
"	Characteristic activity in the past	Every morning he would wake up at 5 o' clock.
"	Contingent use in the main clause	She would work until she heard from her boss.
"	Probability	That would be his wife.
Must	Obligation or compulsion in the present tense	You must do this work.
"	Logical necessity	There must be a mistake.
Ought to	Obligation, logical necessity, or expectation	He ought to go at once. She ought to at her home by now.

3.2.2.4.3. Compounding of semi auxiliary verbs

The set of verbs that show the characteristics of auxiliaries in certain aspects and the characteristics of lexical verbs in certain other aspects are called as semi-auxiliary verbs.

ex. be about to, be apt to, be bound to, be going to, be liable to, be sure to, be to, had/'d better/best, have to, have got to, come to, fail to, get to, tend to, etc.

3.2.2.5. Interpretation of verbal forms for tense, aspect and mood

The inflection and compounding in verbs lead to the formation of different verbal forms expressing different tense, mood and aspect.

3.2.2.5.1. Interpretation of verbal forms for tense

The verbs in English get inflected for two tenses, present tense and past tense. As the names imply the present tense refers normally to present time and past tense to past time.

She is quite well today.

Yesterday she was sick.

She goes to school

She went to school.

3.2.2.5.1.1. Interpretation of verbal forms inflected for simple present tense

The DEWA provides the simple present tense forms (V1) of all the verbs. Simple present has got various uses. The following table depicts this.

Type	**Sub Types**	*Example*
Present without reference to specific time	1. Universal time	The earth goes round the sun.
"	2. Habitual time	He goes to Mecca every year
Instantaneous simple present	1. Commentaries	Krishnan passes the ball to Kannan.
"	2. Demonstrations	I now place the cake in the oven.
"	3. Exclamation	Here comes the winner?
"	4.Performative declarations	We acknowledge your letter.
Simple present with future time reference	1. When there is a temporal adverbial in the clause	The plane leaves for Chicago at eight o' clock.
"	2. In conditional and temporal clauses (introduced by *if, unless, after, before, as soon as,*	He'll do it if you pay him I'll let you know as soon as I hear from him

Type	**Sub Types**	*Example*
	when, etc.)	
Simple present with past time reference	With the verbs of communication, *tell, hear, learn, write* etc. to express the persistence in the presence of the effect of a past communication.	John tells me that you have been abroad.

3.2.2.5.1.2. Interpretation of verbal forms inflected for simple past tense

DEWA gives the simple past forms (V2) forms of all the verbs. Simple past form has got various uses. The basic meaning of the simple past tense is to denote definite past time, i.e. what took place at a given time or in a given period before the present moment. It is found with adverbs referring to past time.

I spoke to him last week.

There are, however, some exceptional cases in which the past tense does not have to be past time.

Type	**Context**	**Example**
Past tense by back shift	In indirect (reported) speech past tense in the reporting verb tends to make the verb of the subordinate clause past, too. This phenomenon is called back-shift.	*1. Direct Speech* I am here You look well 2. Indirect speech You say you are here You said you were here I think you look well I thought you looked well.
Attitudinal past	Attitudinal past is related to the attitudes of the speaker rather than	Do you want to see me now? Did you want to see me now?

	to time. In the following pairs, the past tense is more polite than the present tense.	I wonder if you could help me. I wondered if you could help me
Hypothetical past	Hypothetical past is used in some subordinate clauses, especially if-clauses	If I were you… If I was/were an opera singer… If you loved me, you wouldn't say that.

3.2.2.5.1.3. Interpretation of verbal forms for future

There is no obvious future tense in English corresponding to the time / tense parallel for present and past. Instead, there are number of possibility of denoting future time. Futurity, modality, and aspect are closely related, and future time is rendered by means of modal auxiliaries or semi-auxiliaries or by simple present or progressive forms. The following table depicts the situation.

Type of construction	**Sub types with examples**	**Comments**
Auxiliary verb construction	1. shall + V1 (in first person only) I shall try to do my best 2. will or 'll + V1 (in all persons, including first person.) He will be here in half an hour. I'll do it for you. 3. Statement seen in the past from a point of orientation in the future: will/shall + have + V3 They will have finished their book by next year.	The future and modal functions of these auxiliaries can hardly be separated. Although *shall* and particularly, *will* are the closest approximations to a colourless, neutral future, they do not form a future tense comparable to the present and past tenses. *Shall* in the sense of future is restricted to the first person in standard British English, whereas *will* can be used in the same sense in all persons throughout the English

Type of construction	Sub types with examples	Comments
		speaking world. Prescriptive usage has exerted considerate influence in the direction of using *shall*.
BE-present + going to + V1	1. Future fulfilment of the present: 1.1. Future of present intention (used chiefly with personal subjects) When are you going to get married? 1.2. Future of present cause (found with both personal and non-personal subjects) It is going to rain. Both these suggest that the event is already 'on the way'	This construction denotes future and intention. *Be going to* is not generally used in the main clause of conditional sentences, *will /'ll* or *shall* being preferred instead. If you leave now, you'll never regret it. If you leave now, you are never going to regret it.
Present progressive referring to future: BE-present + V-ing	1. Fixed arrangement, plan or programme The orchestra is playing Mozart this evening. 2. Transition between two states or positions (with transitional dynamic verbs like *arrive, come, go, land, start, stop* etc.) The plane is taking off at 6.30. The president is coming to the Chennai this week	The present progressive refers to a future happening anticipated in the present. Since the progressive is used to denote present as well as future, a time adverbial is often used to clarify meaning in which the verb is being used. They are washing the dishes now/later.
Simple present expressing future: V1	1. Statements about the calendar Yesterday was Monday, today is Tuesday, and tomorrow is Wednesday. 2. Describe immutable events or 'fixtures' When is high tide? What time is the football	The use of the simple present in main clauses may be said to represent a marked future aspect of unusual definiteness, in that it attributes to the future the same degree of certainty one normally associates with

Type of construction	Sub types with examples	Comments
	match? 3. 'Plan' or 'programme' (both simple present and the progressive are often used with dynamic transitional verbs, *arrive, come, leave* etc.,) The train leaves / is leaving tonight from Chennai. 4. Used in subordinate clauses 4.1. Conditional (introduced by *if, unless*, etc) What will you say if I marry my boss? 4.2. Temporal (introduced by *as soon as, before, when* etc.) The guests will be drunk before they leave.	present and past events.
Auxiliary verb construction + progressive: will / shall + Be + V-ing	1. Future-as-a-matter-of-course' He'll do his best (future or volitional interpretation possible) He'll be doing his best (future interpretation only) 2. To convey greater tact and consideration than the simple auxiliary construction does. When will you put on /be putting on another performance? When will you come/be coming?	
BE-present + about to + V1	Near future. i.e. imminent fulfilment We are (just) about to leave.	

Type of construction	Sub types with examples	Comments
BE-present + to + V1	1. Arrangement We are to be married soon There's to be an investigation 2. Command you are to be back by 10 o' clock. **3. Pre-destined future** If he's to succeed in his new profession…	

Some of the future constructions just discussed can be used in the past tense to express time that is in the future seen from a viewpoint in the past. The following table shows the different types of this usage.

Type of usage	Example
would + V1	The time was not far off when he would request this decision
BE-past + going to + V1 (often with the sense of unfulfilled intention)	You were going to give me your address
BE-past + V-ing (=Past progressive)	I was meeting him in Chennai the next day
BE-past + to + V1 (formal = "was destined to" or 'arrangement')	He was late to regret his decision The meeting was to be held the following week.
BE-past about to ('on the point of ') + V1	He was about to hit me.

3.2.2.5.2. Interpretation of verbal forms for aspect

The verbs inflect for aspect. Aspect refers to the manner in which action denoted by the verb is regarded or experienced. The choice of aspect is a comment on or a particular view of the action. English has two sets of aspectual contrasts:

1. Perfective /non-perfective and progressive
2. Non-progressive

The tense and aspect categories can be combined in various ways, so that we get the following system of contrasts in the complex verb phrase.

Form	**Interpretation**	**Example**
have/has + V3	Present Perfect	He has examined
had + V3	Past perfect	He had examined
BE-present + V-ing	Present Progressive	He is examining
BE-past + V-ing	Past progressive	He was examining
have/has + been + V-ing	Present perfect Progressive	He has been examining
had + been + V-ing	Past perfect Progressive	He had been examining

3.2.2.5.2.1. Have/has/had + V3

The verbal form ‘have/has/had + V3’ expresses perfect aspect. Perfect is a term used in the grammatical description of verb forms, referring to a contrast of a temporal or durative kind, and thus sometimes handled under the heading of tense (ex. perfect, future perfect, pluperfect) and sometimes under aspect (ex. perfective, non-perfective). It is illustrated in English by the contrast between I go and I have gone, or between I have gone and I had gone (traditionally called the pluperfect, also now past perfect). Linguists prefer an aspectual analysis here, because of the complex interaction of durational, completive and temporal features of meaning involved. Traditional grammars, however, refer simply to 'perfect tense', etc., and thus imply a meaning, which is to some degree an oversimplification. 'Perfect', in these contexts, refers to past situation where the event is seen as having some present relevance. In Perfective aspect, by contrast, a situation is seen as a whole, regardless of the time contrasts which may be a part of it. Perfective then contrast with imperfective, which draws attention to the internal time-structuring of the situation. The terminological distinction between 'perfect' and 'perfective' is often blurred, because grammarians writing on English have often used the latter term to replace the former, presumably because they wish to avoid its traditional associations.

3.2.2.5.2.2. Have/has + V3

The verbal form '*have/has* + V3' expresses present perfect. The present perfect indicates a period of time stretching backwards into some earlier. It is past with 'arrears relevance'

Simple past: John lived in Chennai for ten years.
Present Perfect: John has lived in Chennai for ten years.

The simple past of the first sentence indicates that the period of residence in Chennai has come to a close. The perfect aspect here denotes that John still lives there at the moment of speaking (although there is no implication that his residence there will continue). Comparison also the following pairs of sentences.

His sister has been an invalid all her life (i.e. she is still alive)
His sister was an invalid all her life (i.e. she is now dead)

For generations, Sparta produced Geece's greater warriors (i.e. the state of Sparta may no longer exist)

Peter has injured his ankle and it's still bad.
Peter has injured his ankle but now its better.

The choice of perfect aspect is associated with time-orientation and consequently also with various time-indicators (lately, *since, so far*, etc). It is therefore helpful to consider these two together. The following table will exemplify the above statement:

Adverbials with simple past (refers to a period now past)	**Adverbial with present perfect (refers to a period stretching up to the present)**	**Adverbial with either simple past or present perfect**
I saw him yesterday (evening)	I haven't seen him hither to. I haven't seen him up to	**I saw/have seen him**

I saw him in the morning I saw him a week ago I saw him earlier this week I saw him last Monday I saw him on other day I saw him at four o'clock I saw him on Tuesday	now. I haven't seen him since Monday. I haven't seen him since last week. I haven't seen him since met you I haven't seen him lately	**today.** I saw/have seen him this month. I saw/have seen him this year. I saw/have seen him recently

There is also a difference that could be stated in terms of definiteness. In the following examples the past implies definite reference and the perfect indefinite reference.

Did you hear Segovia play? (on a certain occasion)
Have you heard Segovia play? (at any time)

3.2.2.5.2.3. Had + V3

The verbal form 'had + V3' expresses past perfect. Past perfect has the meaning of past in-the-past. In some contexts the simple past and the past perfect are interchangeable

John had lived in Chennai for ten years (when I met him).
I ate my lunch after my wife came/had come home from her shopping.

In the second sentence conjunction *after* is sufficient specification to indicate that the arrival from the shopping expedition had taken place before the eating so that extra time indication by means of the past perfect becomes redundant. The perfect can be combined with the progressive into present perfect progressive (*has been examining*) and past perfect progressive (*had been examining*)

3.2.2.5.2.4. BE + V-ing

The verbal form *BE* + V-ing expresses progressive aspect. Progressive aspect indicates temporariness – an action in progress instead of the occurrence of an action or the existence of a state.

Simple Present: John sings well.

Present progressive: John is singing well.

The above two sentences have the same tense but different aspects. Notice the meaning difference between them. *John sings well* refers to his performance, that is he is singing well on a particular occasion. The simple / progressive aspectual contrast also applies in the past tense.

Simple past: John sang well.

Past progressive: John was singing well.

In addition to process and continuation, there are a number of other concomitant meanings or overtones that go with the progressive aspect such as limited duration, incompletion, simultaneity, vividness of description, emotional colouring and emphasis. The following table exemplifies it.

Verbal form	**Interpretation of meaning**
1a. V1 /V1s I play the violin/John plays the banjo	Indefinite Time
1b. BE-present + V-ing John is playing the banjo	Temporariness: John's activity at this particular moment is playing the banjo.
2a. V1/V1s The professor types his own letters (and always has)	Habitual Activity of the professor
2b. BE-present + V-ing The professor is typing his own letters (these days)	Limited Duration: the progressive suggests that the professor's activity is of limited duration.
3a. John always comes late	Characteristic Activity, allows an objective tone
3b. John's always coming late.	Characteristic Activity, necessarily occurring with adverbs like *always* and *continually*. It imparts a subjective, emotionally coloured tone.

4a. V2 I read a book that evening	Completion: the speaker reached the end of the book before the end of the evening.
4b. BE-past + V-ing I was reading a book that evening.	Incompletion: there is no implication that the reading was completed in the course of evening

Besides the regular progressive auxiliary *be*, the verbs *keep (on)*, *go on*, etc have a similar function.

3.2.2.5.3. Interpretation of verbal forms for modality

The modal verbs express different kinds of modality. The category of mood characterizes the actuality or non-actuality of an event. There is thus a basic distinction between realis or indicative mood, evaluating an event as actual, and irrealis mood, evaluating an event as not completely actual. Since there are several ways in which an event can be less completely actual, the irrealis mood distinguishes several types of modality. Modals express degrees of likelihood ranging from impossibility to certainty. The intermediate concepts are probability, improbability, possibility etc. These expressions are expressed in various ways.

Ways	**Structure**	**Example**
Most importantly by modal auxiliaries (*can, may, must* etc.)	can/may/must + V1	You may be right.
More (formally) by a sentence with introductory it and a that–clause	It + word denoting modality + that-clause	It is possible that you are right
By an adverbial such as *necessarily, perhaps, probably*	Adverbial + S	Perhaps you are right.

Here we are interested in expressing degrees of likelihood by modal auxiliaries.

Modal Verbs	**Meaning**	**Example**
can, may, could and *might*.	They express different degrees of possibility. 1.Possibility of the fact (factual) 2. Possibility of the idea (theoretical) *Can* is general statements of possibility has roughly the same meaning as sometimes.	The railways may be improved. The railways can be improved. Lightening can be dangerous = Lightening is sometimes dangerous
could and *might*	Tentative possibility: In their hypothetical sense they are often used to express (tentative) possibility, i.e. to talk of something which is possible, but unlikely.	He could /might be telling lies. (= It is just possible that he is telling lies.) Could you have left your purse on the bus? (= Is just possible…?)
can, be able to etc.	Ability : It is closely related to that of 'theoretical possibility'	He can speak English fluently. Will you be able to meet us in London tomorrow? He is capable of keeping a secret when he wants to. She knows how to type and take shorthand.
must + infinitive and *have* + to infinitive	Certainty or logical necessity.	There must be some mistake. You have to be young. The bombings got to stop sometime.
will	Prediction and predictability:	John will arrive now John will have arrived by

Modal Verbs	**Meaning**	**Example**
	Will expresses the prediction about the present as well as the prediction about the future. *Will* can also be used in habitual sense, to express idea about predictability or characteristic behaviour.	tomorrow Accidents will happen Lion will attack human being when it is hungry
must	*Must* often expresses a certainty about an event which we do not observe, but about which we draw a conclusion from evidence.	John must have arrived by now
ought to and *should*	Probability: The auxiliaries express probability and can be regarded as equivalents of *must*. Our guest ought to be home now.	Our guest should be home by now.

The following table (adopted from Leech, 1989: 261) depicts the referential meanings of modality and the auxiliaries which are used to represent them.

Referential meaning	Auxiliaries which are used to represent the referential meaning

Referential meaning	Auxiliaries which are used to represent the referential meaning										
	can	may	Might	could	Would	will	Shall	must	should	ought to	used to
Possibility	Main use	Main use	main use	less important use							
Ability	Less important use			less important use							
Permission	Less important use	Uncommon use	uncommon use	uncommon use	less important use						
Habit											
Volition (or wish)		Uncommon use			less important use	Less important use	less important use				
Prediction (or future)					less important use	Main use	main use				

Referential meaning	Auxiliaries which are used to represent the referential meaning										
Unreal meaning			uncommon use	main use	man use				less important use		
Tentative meaning									uncommon use		
Strong weak obligation								Main use	main use	main use	
Strong weak deduction		Less important use	Main use								
past state or habit											main use

3.2.2.5.4. Summing up of interpretation of verbal forms for tense, aspect and mood

The following table depicts the building up of verbal forms to denote tense, mood and aspect.

The following table depicts the interpretation of tense, aspect and mood of the verbal forms.

Form	**Meaning**
V-past tense (V2) ex. He wrote.	Past tense
V-present tense (V1, V-s) ex. He writes	Present Tense
will/shall + V1 ex. He will write. I shall write.	Future Tense
may / might + V1 He may/might leave tomorrow.	Future time with modality (In many contexts, modal auxiliaries have inherent future reference, both in their present tense and past form.)
has / have + V3 ex. He has written. I have written	Present perfect aspect
had + V3 ex. He had written	Past perfect aspect
BE-present tense + V-ing ex. He is writing.	Present progressive aspect
BE-past tense + V-ing ex. He was writing.	Past progressive aspect
will/shall + be + V-ing ex. He will be writing.	Future progressive aspect
1. can + V1 ex. He can speak English but he can't write it very well. 2. could + V1 ex.	Ability = be able to = be capable of = know how to

Form	**Meaning**
I never could play chess.	
1. can + V1 ex. Anybody can make mistakes. 2. can + be + V3 The road can be blocked. 3. may + be + V3 ex. The road may be blocked. 4. may + V1 ex. He may succeed. 5.might + V1 He might succeed.	I. Possibility = it is possible but / to theoretical possibility may = factual possibility
1. could be + NP [C] ex. That could be my train. 2. could be + V3 The road could be blocked.	II. Possibility (theoretical or factual, cf. *might*)
may + V1 He may never succeed ('It is possible that he will never succeed')	III. Possibility = it is possible that /to may = factual possibility (cf. *can* = theoretical possibility)
1. can + V1 Can I smoke in here (‘Am I allowed to smoke here?). 2. may + V1 May I smoke in here?	I. Permission = be allowed to = be permitted to (‘can’ is less formal than ‘may’ in this sense)
could + V1 Could I smoke in here?	II. Permission
1. may + V1 ex. You may borrow my car if you like. 2. may not + V1 ex. You may not borrow my car. (=You	III. Permission = be allowed to = be permitted to In this sense *may* is more formal than *can*. Instead of *may not* or *mayn’t*

Form	Meaning
are not allowed to borrow my car.)	*mustn't* is often used in the negative to express prohibition
might + V1 Might I smoke here?	IV. Permission
will + V1 I'll write as soon as I can. Will you have another cup of tea?	I. Willingness (weak volition) unstressed, especially 2nd person. 'Downtoners' like *please* may be used to soften the tone in requests.
shall + V1 He shall get the money. You shall do exactly as you wish.	II. Willingness on the part of the speaker in 2nd person and 3rd person (weak volition). Restricted use.
would + V1 ex. Would you excuse me?	III. Willingness (weak volition)
1. shall + V1 ex. We shall let you know our decision. We shall overcome. 2. shan't + V1 ex. I shan't be long.	I. Intention on the part of the speaker only in 1st person (intermediate volition).
will + V1 I'll write as soon as I can. We won't stay longer than two hours.	II. Intention (intermediate volition). Usually contracted *'ll*; mainly 1st person.
shall + V1 You shall do as I say. He shall be punished. The vendor shall maintain the equipment in good repair	Ia. Insistence (strong volition). Restricted use. b. Legal and quasi-legal.
will + V1 He 'will do it, whatever you say ('He insists on doing it...') (cf. He 'shall do it, whatever you say = 'I insist on his doing it')	II. Insistence ('strong volition' = insist on). Stressed, hence on 'll contradiction. An uncommon meaning.

Form	**Meaning**
would + V1 ex. It's your own fault; you 'would take the baby with you.	III. Insistence ('strong volition')
should + V1 ex. You should do as he says. They should be home by now.	I. Obligation and logical necessity (= ought to)
1. must + V1 ex. You must be back by 10 o'clock. 2. had to + V1 ex. Yesterday you had to be back by 10 o'clock. ex. Yesterday you said you had to / must be back by 10 o'clock. 3. have to / BE + obliged to ex. You don't have to / are not obliged to be back by 10 o' clock.	II. Obligation or compulsion in the present tense (= be obliged to, have to); except in reported speech. Only had to (not must) is used in the past. In the negative sentence needn't, don't have to, not be obliged to be used (but not must not, mustn't which = 'not be allowed to').
	Prediction Cf. the similar meanings of other expressions for logical necessity and habitual present. The contracted form 'all is common
Will/must/should + V1 Ex. The game will/must/should be finished by now.	Specific prediction
Will + V1, V1 Ex. Oil will float / floats on water.	Timeless Prediction
Will/'all + V1 He'll (always) talk for hours if you give him the chance.	Habitual prediction
1. Must / has to + be Ex. There must / has to be a mistake.	Logical necessity

Form	Meaning
(*Must* is not used in sentences with negative or interrogative meanings, *can* being used instead. 2.cannot + be Ex. There cannot be a mistake. 3.mustn't + be (*Must* can occur superficially interrogative but answer-assuming sentence.) ex. Mustn't there be another reason for his behaviour.	
ought to + V1 You ought to start at once. They ought to be here by now.	Obligation and logical necessity

3.2.2.6. Patterns of verb phrases

Traditionally verbs have been distinguished into certain patterns based on the constituents that can go along with the verbs. This has been referred as verb patterns. The traditional distinction between verbs as transitive and intransitive is based on this point of view. These patterns come handy to parse sentences.

Type	Pattern	Example
Verb pattern 1: This represents the patterns of the verb BE. The nominal part of the predicate may be any one of the following items:	NP + BE + NP	This is a book
	NP + BE + PN	It's me
	NP + BE + Possessive P	That's mine
	Interrogative + BE + NP	Who is that?
	NP + BE + Adj.	She is clever
	NP + BE + Adj. P	The statue will be life size

Type	Pattern	Example
a noun, a pronoun, a possessive, an adjective or adjective phrase, an adverb or adverbial phrase/adjunct, a prepositional phrase, an infinitive or infinitive clause.	NP + BE + PP	She is in good health
	NP + BE + Adv	She is here
	There + BE + NP	There was a large crowd
	There + BE + NP + PP	There are three windows in this room
	It + BE + Adj. / NP + to-infinitive (phrase)	It is so nice to sit here with you.
	How + Adj. / NP + (it + BE) to-infinitive phrase	How nice it is to sit here with you
	What + Adj. / NP + (it + BE) to-infinitive clause	What a pity it is to waste them.
	It + BE + Adj. / NP + gerundial clause	It is so nice sitting here with you.
	NP + BE + clause	The trouble is (that) all the shops are shut.
	It + BE + NP / Adj. + clause	It was a pity (that) you couldn't come.
	NP + BE + to-infinitive clause	This house is to let
	It + BE + Adj. / NP + for + N/pronoun + to-infinitive (phrase)	It was hard for him to live on his small pension.
Verb pattern 2 Many verbs may be used without a complement or adjunct. This pattern is for	NP + Vi	The sun was shining
	There + Vi + NP	There followed a long period of peace and prosperity.
	It + Vi + whether-clause	It does not matter whether we start now or latter

Type	Pattern	Example
complete intransitive verb, i.e. verbs which may be used without a complement. Adjuncts are optional.	It + Vi + to-infinitive Clause	It only remains to wish you both happiness.
	It + Vi + that-clause	It seemed that the day would never end.
	NP + Vi + for + PP [Adv adjunct]	We walked for five miles
	NP + Vi + Adv. adjunct	My hat blew off
	NP + Vi +Adj.	The leaves are turning brown.
	NP + Vi + Adjectival past participle	You look tired
	NP + Vi + NP	He died a millionaire
	NP + Vi + Reflexive pronoun	You are not looking yourself today
	S + Vi + Predicative adjunct (i.e. Present participle)	The children came running to meet us.
Verb pattern 3: There are many verbs which are used with repositions so that the verb and preposition function	NP + Vi + preposition + NP (NP = noun, pronoun)	You can rely on me
	NP + Vi + preposition + NP + to-Infinitive Clause	They advertised for a young girl to look after the children

Type	Pattern	Example
as a unit. They may be called prepositional verbs. For example, the verb *succeed* is used with *in; rely* and *depend* are used with *on/upon*. Some verbs may be used with two or more preposition (ex. *complain to somebody about something*; *compare one thing to/with another thing*).	NP + Vi + (preposition + (it))+ that-clause	We will see (to it) that she gets home early. They decided (on) who should act as Sita
Verb pattern 4 Intransitive verbs are also used with a to infinitive as in verb pattern 7. The pattern is subdivided.	NP + Vi + to-infinitive clause (of purpose, outcome, or result)	He ran to chase the thief
	NP + Vi + to-infinitive clause (may be equivalent to a coordinated or subordinated clause)	He turned to see the sun setting
	NP + Vi + to-Infinitive clause (infinitive adjunct is used after some verbs)	She agreed to sing a song
	NP + seem/appear + (to be) + Adj. /NP	This seems (to be) light thing She seemed (to be) unable to enjoy it.

Type	Pattern	Example
	NP + seem/appear/happen/chance + to-infinitive Clause	The baby seems to be asleep. We chanced to meet in the park that morning.
	NP + be + to-infinitive Clause	You are to break the news
Verb pattern 5 The anomalous finites *will, would, shall, should, can, could, may, might, must, dare, need* and *do, does, did*, when used for the interrogative and negative forms and emphatic affirmative are followed by a bare infinitive (without *to*).	NP + Anomalous finites + bare infinitives	You may leave now.
Verb pattern 6 These are patterns for transitive verbs (Vt). In this pattern, a complement or an adjunct may occur but is not essential.	NP + Vt + NP (passivisation is possible)	Nobody answered my question.
	NP + Vt + NP (passivisation is not possible)	She laughed a merry laugh.
	NP + Vt + Gerundial clause (not replaceable by to-infinitive)	She enjoys playing tennis
	NP + Vt + Gerundial clause (replaceable by to-infinitive clause)	The children love playing on the sand.

Type	Pattern	Example
The pattern is subdivided.	NP + need/want/bare + Gerund (with passive meaning)	The garden needs watering.
Verb pattern 7 In this pattern the verb is followed by a to infinitive which may be preceded by *not* where this makes sense.	NP + Vt + (not) + to-infinitive clause	I prefer not to start early.
	NP + have/ought + (not) + to-infinitive clause	You ought not to complain..
Verb pattern 8 In this pattern the object of the verb is an interrogative pronoun or adverb or *whether* followed by a to-infinitive clause.	NP + Vt + interrogative pronoun + to-infinitive Clause	I don't know who to go for advise. She could not decide what to do next.
	NP + Vt + interrogative Adv. + to-infinitive Clause	Have you settled where to go for your holidays
	NP + Vt + whether + to-infinitive Clause	She didn't know whether to cry or to laugh.
Verb pattern 9 In this pattern the object of the verb is a that-clause. After such frequently used verbs as *say*, *wish*, *hope*, *think*, *expect*, *believe*, *that* is often (or even usually) omitted. After less frequently used verbs such as *decide, suggest* and	NP + Vt + that-clause	He doesn't believe that my intentions are serious.

Type	Pattern	Example
intent that is rarely omitted in formal style. *Feel* is used in this pattern when it indicates non-physical perception. *Hear* is used when it means *learn* or *be informed.*		
Verb pattern 10 In this pattern, the object of the verb is a dependent clause or question. The clause may be introduced by a relative pronoun or adverb, by *what* (meaning *that which*) or by *whether*.	NP + Vt + Depend Clause/question	I don't know who she is. I don't know who is she.
	NP + Vt + whether-clause	She asked whether I took sugar in my tea.
Verb pattern 11 These patterns are of transitive verbs used with a complement or with an indirect object. In this pattern a verb is followed by a noun or pronoun (which must be animate) and a that-	NP + Vt + NP + that-clause	He warned us that the roads were icy. The workers told their employers that they wanted more money.

Type	**Pattern**	**Example**
clause.		
Verb pattern 12 Verbs in this pattern are followed by an NP which is the indirect object and an NP which is the direct object. The indirect object is equivalent to a prepositional adjunct with *to* or *for*. It must be animate.	NP + Vt + NP [IO] + NP [O] The indirect object can be converted into *to* + NP	He handed her the letter (= He handed the letter to her)
	NP + Vt + NP [IO] + NP [O] The indirect object can be converted into for + NP	Are you going to buy me some? (= Are you going to by some for me?)
	NP + Vt + NP + NP	He struck the door a heavy blow.
Verb pattern 13 Verbs in these patterns are followed by a noun or by pronoun or a prepositional group with *to* or *for*. The object of the preposition must be animate.	NP + Vt + NP [O] + to + NP	She read the letter to all her friends.
	NP + Vt + NP [O] + for + NP	I have bought some chocolate for her.
Verb pattern 14 In this pattern the verb is followed by a noun or pronoun (direct object) and a prepositional	NP + Vt + NP [O] + PP	We congratulated him on his success. Thank you for your kind help.
	NP + Vt + PP + NP [O]	I explained to him the impossibility of granting his request.

Type	Pattern	Example
phrase.	NP + Vt + PP + to-infinitive + that clause	I must leave it to your own judgement to decide whether you should offer your resignation.
Verb pattern 15 In this pattern the verb is used with an adverb or adverbial phrase. The pattern is subdivided.	NP + Vt + NP [O] + Adv. P/PP	Please put the milk in the refrigerator. The deductive followed the suspected man for two hours all afternoon.
	NP + Vt + NP [O]+ Adverbial particle	Put your shoes on. Take your coat off.
	NP + Vt + Adverbial particle + NP [O]	Put on you shoes. Take off your coat.
Verb pattern 16 In this pattern the direct object is followed by an adverbial adjunct. The pattern is subdivided. In this pattern the adverbial adjunct is a to-infinitive clause (which may be introduced by *in order* or *so as*) which is an adjunct of purpose or intended result.	NP + Vt + NP [O]+ to-infinitive clause	He brought his brother to see me.
	NP + Vt + NP [O] + as/like/for + NP	They have hired a fool as our football coach. Put it like this. She miss took me for my twin sister.

Type	Pattern	Example
Verb pattern 17 In this pattern the verb is followed by a noun or pronoun and a to-infinitive. The pattern is subdivided.	NP + Vt + NP [O] + (not) + to-infinitive clause (can be passivized)	I warn you not to believe a word he says.
	NP + Vt + NP + (not) + to-infinitive clause (cannot be passivized)	He doesn't want anyone to know that he is going away.
Verb pattern 18 In this pattern the verb is used with a noun or pronoun and a bare infinitive. A to-infinitive is used in passive construction. The pattern is subdivided.	NP + Vt + NP + infinitive clause (verbs indicate physical perception)	Did any one hear John leave the house? Did you see anyone go out?
	NP + Vt + NP + infinitive clause (verbs do not indicate physical perception)	What makes you think so?
	NP + have + NP + infinitive clause	We have computers to do our work.
Verb pattern 19 In this pattern the verb is followed by a noun or pronoun and the *–ing* form of the verb. These together form the direct object. The pattern is subdivided.	NP + Vt + NP + present participle phrase (verbs indicate physical perception)	He felt his heart throbbing.
	NP + Vt + NP + present participle phrase (verbs do not indicate the physical perception)	I can't have you doing that.
	NP + Vt + NP + *ing* form of the verb (NP = noun, pronoun, possessive)	I can't understand him/his leaving so suddenly.

Type	Pattern	Example
Verb pattern 20 In this pattern the verb is followed by a noun or pronoun and an interrogative pronoun or adverb (except *why*), or *whether* introducing a to-infinitive.	NP + Vt + NP + interrogative pronoun or adverb + to-infinitive clause	I showed them how to do it.
	NP + Vt + NP + whether + to-infinitive clause	Tell him whether to trust him or not.
Verb pattern 21 This pattern is similar to verb pattern 20, except that the interrogative here introduces a dependent clause or a question in place of the infinitive-clause. *If* may replace whether here (with the same meaning) provided there is no confusion with the use of *if* to introduce the conditional clause.	NP + Vt + NP + Dependent clause/Question	Tell me what you name is? He told me why he had come.
Verb pattern 22 In this pattern the verb is used with a	NP + Vt + NP [O] + Adj. (NP = noun, pronoun, gerund)	We painted the ceiling green. The blister on my heal

Type	Pattern	Example
noun or pronoun or gerund followed by an adjective. The adjective may indicate result or manner.		made walking painful.
Verb pattern 23 In this pattern the noun or pronoun following the verb has either an object complement or a subject complement in the form of a noun or noun phrase.	NP + Vt + NP [O] + NP [Object complement]	The team has voted me their new captain.
	NP + Vt + NP + NP [Subject complement]	Jill has made Jack an excellent wife.
Verb pattern 24 In this pattern the verb is followed by a noun or pronoun and a past participle. The pattern is sub divided.	NP + Vt + NP [O] + Past Participle Phrase NP [O] = noun, pronoun	Have you ever heard a pop song in Japanese? You must make yourself respected.
	NP + have + NP [O] + Past Participle Phrase NP [O] = noun, pronoun	She's had her handbag stolen. The pilot had his plane hijacked.
	NP + have/get + NP [O] + Past Participle NP [O] = noun, pronoun	I must have/get my haircut.
Verb pattern 25 Most of the verbs used in this pattern indicate an opinion,	NP + Vt + NP [O] + (to be) + Adj./NP	Most people considered him (to be) innocent. I have always found Jonathan a good friend.

Type	Pattern	Example
belief, supposition, declaration, and mental perception. They all followed by a noun or pronoun *to be* and an adjunct (an adjective or noun). *To be* sometimes omitted. The perfect infinitive *to have been* is not omitted.		

3.2.3. Building of adjectival phrase

Adjectives in English can be identified by the following characteristic features:

1. Most of them inflect for comparison three degrees, positive, comparative and superlative.

Positive	Comparative	Superlative
Good	better	best
Big	bigger	biggest
Beautiful	more beautiful	most beautiful

2. Many are formed by the addition of derivational suffixes to nouns.

Nouns	Adjectives
Snow	snowy
Courage	courageous
Beauty	beautiful

3. They can be preceded by intensifiers such as *very* and *quite*.

very good

Quite right

4.They can precede nouns.

red carpet

sweet words

5. They usually have primary stress on the first syllable.

'clever, 'angry

3.2.3.1. Constituents of adjectival phrases

Traditionally all the nominal modifiers are put under the category of adjective. They are listed below:

Traditional classification of adjectives	**Examples**
Demonstrative	this, that, these, those
Distributive	each, every, either, neither
Interrogative	what, which, whose
Possessive	my, your, his, her, its, our, your, their
Of quality	good, stupid, clever, brave

In the present day analysis the first four types of traditional adjectival categories are put under determiner and only the last type (adjective of quality) is taken as adjective. Both present participle (with *ing*) and participles (with *ed*) can be used as adjectives:

The cinema is interesting.

A tired worker.

Adjectives which precede their nouns are called attributive adjectives.

this book.

The distribution and arrangement of adjectives is listed below:

Type of adjective	**Distribution**	**Example**
Demonstratives and possessives	Demonstratives and possessives occur before nouns.	this book his book
Adjectives of quality	Adjectives of quality, however, can come either before their nouns or after verbs such as *be, seem, become,* etc. Adjectives after the verb are called predicative adjectives.	1.Adjectives occurring before noun: happy couple tedious journey 2.Adjectives occurring after verbs: *Uma is clever.* Usha grew impatient. Kala became happy. Rani turned pale.
"	Some adjectives can be used only attributively and some only predicatively and if the position is changed, meaning will change.	1. Attributive adjectives utter fool bad sailor heavy drinker 2.Predicative adjectives Kannan is afraid. *afraid Kannan Uma is upset. *Upset Uma Usha is right. Right Usha.

Type of adjective	**Distribution**	**Example**
Adjective denoting size (except little), general description, (excluding adjectives of personality, emotions, etc.), age and the adjective little, shape, colour, material, origin, purpose (ex. gerunds in compound nouns: swimming suit, walking stick)	4. A fairly usual order of adjectives of quality are as given below: size (except little), general description, (excluding adjectives of personality, emotions, etc.), age and the adjective little, shape, colour, material, origin, purpose (ex. gerunds in compound nouns: swimming suit, walking stick)	a red silk saree a round wooden table a thick metal walking stick
Adjectives of personality/emotion Adjectives of physical description	Adjectives of personality/emotion come after adjectives of physical description. They can precede or follow *young/old*.	a frail frightened girl an obese angry boss a young excited lady. an excited young lady.
Little, old, and young	*Little*, *old*, and *young*, when used as part of an adjective-noun combination and not to give information, are placed next to their nouns.	a good old man a nice little child
Old and young	When used to give information, *old* and *young* occur in position given below.	an old Welsh bard a bulky young lady
fine, lovely, nice + shape etc.,	*Fine, lovely*, *nice* + shape etc., usually express approval of the size, etc.	a fine warm house. nice thin cloth.

Type of adjective	Distribution	Example
Pretty	*Pretty* followed by another adjective with no comma in between is an adverb of degree meaning *very, quite*.	Uma is pretty clever. Usha is pretty fast.

3.2.3.2. Adjectival comparison

Adjectival comparative construction varies based on the three degrees of comparison. The three types of forms, simple, comparative and superlative forms, of adjectives can be referred from the DEWA.

Type	Description	Example
Positive degree	The positive form is preceded by as and followed by *as.*	Uma is as beautiful as her mother. It is not as costly as a diamond.
Comparative degree	*Than* follows the comparative form.	Uma is prettier than Usha. Kannan's voice is louder than mine.
Superlative degree	*The* precedes the superlative form	Usha is the most beautiful girl in the class.

3.2.3.3. Patterns of adjectival phrases

The following table shows different types of building of adjectives with reference to their pattern of occurrence.

Types and sub types	Pattern	Example

Types and sub types	Pattern	Example
1a.	[… + Adj. + N]NP + V	A good boy came
1.b.	NP + BE + [.. + Adj. + N] NP	He is a good boy
2.	NP + BE + Adj.	She is beautiful
3.	BE + Intensifier [Adv] + Adj.	She is very beautiful
4.a.	It + BE + Adj. + to-infinitive Clause	It 's easy to please Jim
4.b.	NP + BE + Adj. + to-infinitive Clause	Jim is eager to please every one
4.c.	It + BE + Adj. + to- infinitive Clause	It is wrong of Jim to leave
4.d	It + Adj. + that-Clause	It is certain that Jim will win.
4.e.	NP + Adj. + to-infinitive Clause	John was first to arrive
6.	NP + Adj. + [preposition + NP] PP	John is anxious for news
7	NP + Adj. + (+ preposition) + Clause	John is glad that you succeeded. John is anxious about how they got on.

3.2.4. Building of adverbial phrases

Many adverbs share the characteristics of adjectives. They form the comparative and superlative with more and most respectively before the positive. Most of them are derived by adding ly to the adjectives. They usually follow the verbs and specify manner, place, or time. The following table gives the different kinds of adverbs. These may be broadly classified into three categories:

1. Simple adverbs
2. Interrogative adverbs which are used to frame questions
3. Relative adverbs which are used to combine clauses

Broad classification	Sub types	Examples
I. Simple	Manner	slowly, quickly, boldly, well, hard
“	Place	here, there, near, up, by
“	Time	then, today, still, soon, now
“	Frequency	always, never, often, once, occasionally
“	Sentence	certainly, definitely, surely
“	Degree	rather
II. Interrogative adverbs which are used to frame questions	Interrogative	when, where, why, how
I. Relative adverbs which are used to combine clauses	Relative	when, where, why

3.2.4.1. Adverbial comparison

Adverbial comparative construction varies based on the three degrees of comparison. The three forms of adverbs, positive, comparative and superlative forms, can be referred from the DEWA.

Type	Description	Example
Positive degree	With the positive form *as...as* in the affirmative and *as/so...as* in the negative are used	Uma shouted as loudly as she could. It didn't cost her so much, as she feared.
Comparative degree	With comparative form *than* is used.	Uma walks faster than Usha. Kannan screamed louder than I expected.

Superlative degree	With superlative it is possible to use *of* + noun	Usha worked hardest of the labourers.

3.2.4.2. Patterns of adverbial phrases

The following table shows the building of different types of adverbs and their distribution

Types of adverbs	**Their occurrence/ distribution**	**Pattern with examples**
Adverbs of Manner	They come after the verb when it is intransitive.	NP + Vi +Adv1 Usha ran fast.
"	With transitive verbs they come either after the object or before the preposition	NP + Vt + NP [O] + Adv1 I ate banana hurriedly. Usha welcomed Uma warmly
"	If the object is long the adverb occur usually before the verb.	NP + Adv1 + Vt + NP [O] Usha warmly welcomed the minister from Chennai.
"	If an adverb is placed after a clause or phrase, it normally modifies the verb in that clause.	NP + Adv1 + V + to-infinitive clause They secretly decided to go to Chennai. They decided to go to Chennai secretly.
"	Adverbs concerning character and intelligence (ex. *foolishly*, *generously*, etc.) when placed before the verb, applies to the action, but the meaning changes when it occurs after the verbs or after verb + object.	1. NP + V + NP [O] + Adv11 Usha answered the question foolishly. 2. NP + Adv1a + V + NP [O] Usha foolishly answered the question.
	Badly and *well* as adverbs of	1. NP + V (AV) + NP [O]

Types of adverbs	Their occurrence/ distribution	Pattern with examples
	manner or degree come after the verb or the object in active voice and before the past participle in passive voice.	+ Adv12 Kannan paid her well. Uma treated him badly. 2. NP + BE + Adv12 + V (PV) She was well paid. He was badly treated
"	*Somehow* can be placed at the beginning or after a verb without object or after the object.	1. Adv13 + NP + V + (NP) Somehow Usha did it. Usha did it somehow. Somehow Uma escaped. 2. NP + V + Adv13 Uma escaped somehow.
Adverbs of place	*away, everywhere, here, nowhere, somewhere, there* etc. are usually placed after the verb when there is no object and if there is one after verb + (preposition) + object.	1. NP + V + Adv2 Uma ran away. Usha waits outside. Raja sent her aboard. Write it there. NP + V + PP + Adv2 Kannan looked for it everywhere. NP + Vt + NP + Adv2 Keep the book somewhere.
"	*Somewhere* and *anywhere* follow the basic rules for *some* and *any*.	NP + Vt + NP + Adv21 Usha has seen it somewhere. Uma hasn't seen it anywhere. Kannan has gone somewhere.

Types of adverbs	Their occurrence/ distribution	Pattern with examples
		Kannan hasn't gone anywhere.
"	*here* and *there* can be followed by *be/come/go* + subject.	Here/ there + BE/COME/GO + NP [S] Here's Usha's friend. There goes my wife. Here comes Raja. There comes the elephant.
	A personal pronoun as subject precedes the verb.	There/here + NP [=Personal pronoun] + V There he goes. Here it comes.
Adverbs of time	*afterwards, eventually, lately, now, recently, soon,* etc. are usually placed at the beginning or end of the clause.	Adv31 + NP + V + NP [IO] + NP [O] Eventually Usha told Uma the secret NP + V + NP [IO] + NP [O] + Adv31 Usha told Uma the secret eventually.
"	*before, early, immediately,* and *late* come at the end of the clause	NP + V + Adv32 Kala came early. Uma has gone there before. Let's start late. Come immediately
"	*Since* and *ever since* are used with perfect tense. Phrases and clauses with *since/ever since* are usually in the end position.	NP + V-perf + Adv33 Uma left Mysore in 1998. I haven't seen her since. Usha mocked at Kannan and he has been depressed ever since.

Types of adverbs	Their occurrence/ distribution	Pattern with examples
	Yet and *still* occur as adverbs of time. *Yet* comes after verb or after verb + object, but it can be placed before verb if the object contains a number of words.	1. NP + V + (NP [O]) + Adv34 Usha hasn't come yet. Uma hasn't seen him yet. 2. NP + Adv34 + Vt + NP [O] Kala hasn't yet finished the work I gave her a week ago.
Adverbs of frequency	*always, continually, frequently, occasionally, often, usually, once,* etc. forms one type and *ever, never, hardly, rarely, seldom*, etc. form another type. Both these types are normally place after the simple tense of *be* and before the simple tense of all other verbs.	1.NP + V + Adv4 Usha is usually happy. 2. NP + Adv4 + V Uma often comes late. Kala is often late. Kannan seldom visits Uma.
"	With compound tense they are placed after the first auxiliary and with interrogative verbs, after auxiliary + subject.	1. NP + Aux1 + Adv4 + Aux2 + V Uma has often been warned. 2. Aux1 + NP + Adv1 + V Has Uma ever been warned?
"	Adverbs of the first type can also be put at the beginning or end of a sentence or clause. *Always* is an exception; it is rarely found at the beginning. Adverbs of the second type, hardly, ever, rarely, etc. also occur at the beginning, but the inversion of the main verb is	Adv1+ Adv41 + NP + V Secretly ever did Uma try to meet Usha? Adv42 + NP + V ... Seldom have Usha heard such a speech.

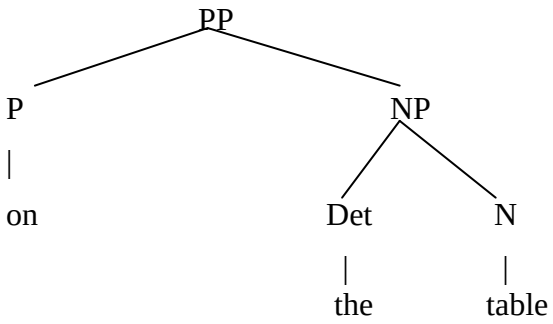
Types of adverbs	Their occurrence/ distribution	Pattern with examples
	necessary.	
"	*Hardly, scarcely*, and *barely* are almost negative in meaning and *hardly* is chiefly used with *any, ever, at all*, or the verb *can*.	There + BE + Adv4 + NP There is hardly any money left. NP + Adv4 + V… Usha hardly ever visit her friends.
Sentence adverbs: These modify the whole sentence/clause and normally express the speaker opinion	Sentence adverbs expressing degrees of certainty, *actually, apparently, certainly, definitely, perhaps, surely*, etc. come after *be*.	NP + BE + Adv5 + Adj Usha is certainly right. Uma is apparently happy.
"	before simple tense of other verbs.	NP + Adv5 + V … Kannan definitely looks happy. Usha perhaps thinks so
"	after the first auxiliary is a compound verb	NP + Aux1 + Adv5 + Aux2 + V Uma would obviously have gone. NP + Aux + Adv5 + V Usha will surely come.
"	at the beginning or end of a sentence/clause	Adv5 + NP + V… Apparently Uma looks happy. NP + V …+ Adv5 Uma looks happy apparently.
"	*Definitely* is more usual at the end and *perhaps* and *possibly* are chiefly used in front.	NP + V … + V51 Uma will like Usha definitely. NP + V … + Adv52

Types of adverbs	Their occurrence/ distribution	Pattern with examples
		Perhaps Uma will like Usha.
"	Sentence adverbs like *admittedly, frankly, honestly*, etc. are usually in front (the end position is also possible), normally separated with a comma.	Adv53, NP + V … Honestly, Usha has won the first prize. Frankly, I disagree with Uma. Admittedly, Usha is the most beautiful girl in the group.
Adverbs of degree	Adverbs of degree, *absolutely, quite, almost, barely, completely, enough, quite, rather,* etc. modifies an adjective or another adverb and is placed before it.	NP + BE + Adv6 + Adj Usha is quite happy. Uma is extremely beautiful. NP + BE + Adv6 + V … Kala was completely covered with mud. NP + HAVE + Adv6 + V… Bava had almost reached Chennai.
	Even though follows its adjective/adverb.	NP + BE + Adj + Adv61 The knife isn't sharp enough. That food is not good enough.
"	Adverbs of degree such as *almost, barely, enough*, etc. can also modify verbs.	NP + Adv62 + V Uma almost fell down. NP + V + Adv62 Usha had enough.

Types of adverbs	Their occurrence/ distribution	Pattern with examples
		NP + Aux + Adv62 + V… Kala could barely see the picture.
"	*Only* can also modify verbs and is placed next to the word to which it applies.	NP + V + Adv63… Usha ate only banana. Kala only gave me her pen. NP + V + NP + PP + Adv63 Kala gave her pen to me only.
"	*Just*, like *only* precedes the word it applies for.	NP + Aux + Adb64 + V.. Uma has just gone home. Usha has just finished her work.

3.2.5. Building of prepositional phrases

A prepositional phrase consists of a preposition followed by a prepositional complement which is characteristically either a noun phrase or a clause (wh-clause or V-*ing* clause) in nominal function.



In the most general terms, a preposition expresses the relation between two entities, one being that represented by the prepositional complement. Of the various types of relational meaning, those of place and time are the most prominent and easy to identify. Other relational meanings such as instrument and cause may also be recognized although it is difficult to describe the prepositional meanings systematically in terms of such labels. Some prepositional meanings may be elucidated best by seeing the preposition as related to a clause.

3.2.5.1. Typology of prepositions

Prepositions can be identified as simple and complex based on the number of words that make up the preposition. The following table depicts the typology of prepositions based on its composition.

Type	Sub types	Items
Simple prepositions: Most of the common English prepositions consist of one word.	Pure preposition	*Aboard, about, above, across, after, against, along, alongside, amid, amidst, among, amongst, around, at, as, atop, before, behind, below, beneath, beside, besides, between, beyond, but, by, despite, down, during, for, from, in, inside, minus, notwithstanding, off, of, on, upon, opposite, out, outside, outwith, over, past, per, plus, re, round, since, than, through, throughout, to, toward, towards, under, underneath, until, till, up, via, with, within, without*.
	Prepositions which have affinities with verbs or adjectives	except, excepting, bar, barring, concerning, considering, following, including, granted, pending, less, like, near, save, unlike, worth
Complex prepositions: Most complex prepositions are placed according to their form which can be categorized into one of three:	1.Averb + prepositions	*along with, apart from, aside form, as for, as to, away from, into, off of, on to*
“	2.Verb/adjective/	*owing to, except for, due to, but for,*

Type	Sub types	Items
	conjunction/etc. + preposition	*because of*, etc.
“	3.Preposition1 + noun + preposition2	*by means of, in comparison with, in case of, etc.* Prepositions is preceded by a definite or indefinite article: *in the light of, as a result of* 1. in + noun + of *in case of, in charge of, in view of, in need of, in spite of, in front of, in lieu of, in favour of, in place of, in face of, in aid of, in quest of, in respect of, in search of, etc*. 2. in + noun + with *in contact with, in common with, in line with, in accordance with,* etc. 3. by + noun + of *by means of, by way of, by virtue of, by dint of,* etc., 4. on + noun + of *on account of, on behalf of, on top of, on pain of, on the strength of,* etc. 3. Other types *at variance with, in exchange for, in return for, in addition to, in relation to, at the expense of, for the sake of, in/with regard to, with respect to, at the hands of,* etc.

3.2.5.1.1. Prepositions expressing spatial relations

Prepositions can be ascribed dimensional property based on the type of location. The dimension-type of preposition is the dimensional property ascribed, subjectively speaking, to the location denoted by the prepositional complement. The following table shows the three dimension sub types and their sub types with examples.

Dimension types	**Sub types**	**Examples**
Dimension-type 0	Point	at the shop at the North Pole at the bus-stop at the end of the road
Dimension type ½	Line	The city is situated on the bank of Cauveri. The city is situated on the boundary. The city is situated on the coast.
	Surface	A notice was on the wall. A notice was on the ceiling. A notice was on my back.
Dimension type 2/3	Area	in the world in the village in the park
	Volume	in the bathroom in the cathedral in the box

The following table indicates some of prominent prepositions of place.

	Positive		Negative	
Dimension type	**Destination**	**Position**	**Destination**	**Position**
Dimension type 0	to	At	(away) from	away from
Dimension type ½ (line or surface)	on(to)	On	Off	off
Dimension type 2/3 (area or volume)	in(to)	In	out of	out of

3.2.5.1.1.1. Simple position and destination

Between the notions of simple position (or static location) and destination (movement with respect to an intended location) a cause-and-effect relationship can be found.

Destination	**Resultant position**
Ram went to Chennai	Ram was at Chennai
Ram fell on (to) the floor	Ram was on the floor
Ram dived in(to) the water	Ram was in the water

The negative prepositions *away from*, *off*, and *out of* may be defined simply by adding the word *not* to the corresponding positive prepositions.

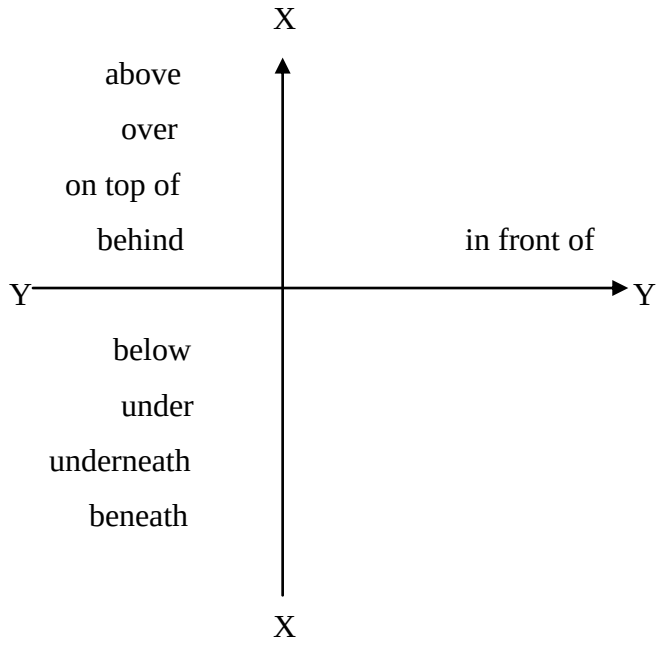
Ram is away from Chennai.

The books were off the shelves.

He's out of office.

3.2.5.1.1.2. Relative position

Besides referring to simple position, prepositions may express the relative position of two objects or groups of objects. *Above, below, over, under, on top of, underneath,* and *beneath* express relative position in a vertical direction, whereas *in front of* and *behind* represent it in a horizontal direction. The following figure depicts the relation between the directions and the prepositions used to express them.



3.2.5.1.1.3. Passage

With the verbs of motion, the prepositions express an idea of PASSAGE as well as designation. For example, *by, behind, over*, etc. denote passage with verbs of motion.

He jumped over a ditch.
Some one ran behind the goal post

3.2.5.1.1.4. Directional path

Up, down, across, along, around and *round*, with verbs of motion make up a set of prepositions expressing movement with reference to an axis or directional path.

He walked up and down the platform.

He ran up the hill

We ran around the corner.

3.2.5.1.1.5. Orientation

Most postposition listed above can be used in static sense of orientation.

He lives across the moors.

The village past the bus stops.

3.2.5.1.1.6. Resultative

When combined with the verb *BE,* all prepositions which have motional meaning can also have a static resultative meaning indicating the state of having reached the destination.

The horses are over the fence.

At last we are off the forest.

3.2.5.1.2. Prepositions expressing temporal relations

A prepositional phrase of time usually occurs as adjunct or post modifier, but it can occasionally be itself the complement of a temporal prepositions. There are only two dimension types, *viz.* 'point of time' and 'period of time' in the time sphere. Many of the prepositions used for denoting spatial relations are used for denoting temporal relations too. The title no. 3.2.5.2. depicts this.

3.2.5.1.3. Genitive *of*

The most common English preposition, *of*, occurs chiefly as a post-modifying genitive in noun phrase. There is relation between the genitive *0f*-phrase and the genitive suffix *s*.

a typewriter of my father
the courage of the man
the envy of the world
the trial of the conspirators
the virtue of thrift
a flock of sheep
a glass of water
seven of my friends
people of the Middle Ages
the house of my dreams

3.2.5.2. Summing of prepositional phrases and their interpretations

The following table depicts different PPs and their interpretations.

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
at	at + a set of spatial NPs	Dimension 0	He is standing at the bus stop
at	at + a set pf temporal NPs	Time when Point-of-time	He came at six o'clock
at	at + a set of nouns	Period-of-time	at Christmas
at	at + NP invoking stimulus		I am upset at her behaviour.
in	in + a set of spatial NPs	Dimension ½ Area	There is no fun in the world
In	in + a set of spatial NPs	Dimension 2/3 Volume	in the box
in	in + a set of temporal NPs	Within	in five weeks
in	in + a set of temporal NPs	Period-of-time	in the evening in August

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
in	in + a set of NPs	Manner	He did it in hurry.
on	on + a set of spatial NPs	Dimension type ½ Area	He sat on the table.
on	on + a set of temporal NP		He came on Monday He came on the following day
above, over, at the top of	above/over/at the top of + Spatial NPs	Superior spatial relation	(It hangs) above his head.
over	over + a set of NPs	position	A lamp hung over the door
over	over + a set of NPs	destination	They threw a blanket over her
over	over + a set of NPs	passage	They climbed over the ball
over		orientation	They live over the road
over	over + a set of NPs	resultative	At last we were over the crest of the hill. The horses are over the fence.
over	over + a set of NPs	pervasive (static)	Leaves lay thick over the ground
over	over + a set of NPs	pervasive (motion)	They splashed water (all) over me
all over	all over + Spatial NP	Dimension-type ½, especially when preceded by *all*, have pervasive meaning	The child was running all over the flower borders.

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
over	over + Temporal NPs	Duration (durational meaning parallel to the pervasive meaning with reference to place.)	He camped there over the holiday.
below, under, etc	Inferior prepositions + Spatial NPs	Inferior spatial relation	The dog sits under the table.
in front of	anterior prepositions + Spatial NPs	Anterior spatial relation	in front of the table
before	before + Spatial NP	Anterior spatial relation	He was standing before the house
before	before + Temporal NP	Anterior time relation	He will come before five o' clock.
before	before + NP denoting an event	Anterior time relation	He came here before the war.
behind	behind + Spatial NP	Posterior spatial relation	He was standing behind the building
after	after + Temporal NP	posterior time relation	He came after five o' clock
since	since + Temporal NP		He was sick since yesterday.
until, till	until, till + Temporal NP		He was awake till now
to	to + Spatial NP	Goal	(He came) to Chennai
to	to + Temporal NP		He worked from five o' clock to 10 o' clock.

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
to	to + Benefactor NP	Goal/Benefactor	He gave the ring to her.
from	form + Spatial NP	Source	He came from Chennai.
from	from + Temporal NP	Duration	He worked from five o' clock to 10 o' clock.
from… to	from + Spatial NP + to + Spatial NP	Source & goal	He walked from railway station to bus stand.
from...to	from + Temporal NP + to + Temporal NP	Duration.	She worked from 2 to 3 o' clock.
between	between + Spatial NP	Interior spatial relation.	He is standing between two pillars.
between	between + temporal NP	Period	I'll phone you between lunch at three o'clock.
through	through + Spatial NP	Path	He went through the forest.
through	through + Spatial NP	Passage with reference to dimension type ½ or dimension type 2/3.	The ball rolled through the grass.
through	all + through + Spatial NP	Dimension-type ½, especially when preceded by *all*, have pervasive meaning	Chaos reigned all through the house.
across, past	across + Spatial NP	Passage with reference to dimension type ½ or dimension	The ball rolled across the grass.

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
		type 2/3.	
within	within + Temporal NP	Interior temporal relation	He will finish the work within two days.
up to	up to + set of Spatial NPs	Goal	He went up to bus station.
up to	up to + set of Temporal NPs	Goal	Up to last week, I hadn't received a reply
through out	through out + Spatial NP	Pervasive	He searched for her through out Chennai
through out	through out + Temporal NP	Durative (durational meaning parallel to their pervasive meaning with reference to place)	He studied her lessons through out night. He camped there throughout the summer.
(all) through	all through + Temporal NPs	Durative (durational meaning parallel to their pervasive meaning with reference to place.)	He worked hard all through his life.
with	with + a set of NPs	Accompaniment	He went with her
with	with + a set of NP having instrumental sense	Instrument	He cut the apple with knife
with	with + a set of NPs	Means (= by means of)	He cooked it with fire.
with	with + a set of NPs	Manner	He did it with great care.
without	without + as set of	Instrument	He drew the picture

Preposition	**Prepositional phrase**	**Meaning/ Interpretation**	**Example**
	NPs having instrument sense		without a ruler.
without	without + a set of NPs	Means (= not by means of)	He decorated it without flower.
by	by + a set of NPs having instrumental sense	Instrument	(He cut the apple) by a knife
by	by + a set of NPs of human instigator	Agent	(He was killed) by her
by	with + a set of NPs	Means	(He cooked it) with fire
by	by + a set of temporal NPs	Point of time	By the time we'd walked five miles, he was exhausted
for	for + NP	Purpose	(He did it) for money.
for	for + NP denoting a benefactor	Recipient	(He bought it) for her. (He laid a trap) for his enemies.
for	for + Temporal NP	During	(He camped there) for summer.
for	for or against + NP	Support or opposition	Will you vote for or against us?
like	like + a set of NPs	Manner	He writes poetry like his brother.
because of, on account of, for fear of, lack of, out of, etc.	because of, etc. + a set of NP	The range or spectrum between cause and purpose	Because of draught, the price of rice was high last year.

Note different meanings elucidated for the prepositions with reference to the context. It is not only the NPs which follow the preposition but also the verbs with which the PP are collocated give different kinds of interpretation to the preposition.

3.2.6. Phrasal co-ordination

In phrasal co-ordination, instead of two sentences, two or more phrases are coordinated.

Venu and Meera make an ideal couple.

Two and two make four.

And and *or* are the main coordinators for phrasal co-ordination. *But* is used only to link adjective phrase and adverb phrases.

A very short but unusually thrilling story.

He worked slowly but steadily.

Most subordinators cannot be used to link phrases, but *if* and *though* are used quite freely to link adjective phrases and adverb phrases.

A very pleasant if long journey.

A simple though efficient system.

There are different types of phrasal co-ordination.

Type	**Structure**	**Example**
Coordination of noun phrases	NP and/or NP Noun phrases are commonly conjoined	Ram and Prem are brothers.
Coordination of more than two noun phrases	NP, NP,…and/or NP *And* and *or* can link more than two NPs, and all but the final instance of the conjunctions can be omitted.	We congratulated Ram, Prem, and Beem.
Coordination of determiners	Det and/or Det Demonstratives can be linked to each other or to other determiners in the NP.	Take this (pen) and that pen
Coordination of adjectival phrases	Adj P and/or Adj P Adjectives both predicative and attributive can be conjoined.	She is polite and smart. The polite and smart girl welcomed us.
Coordination of adverbial	Adv P and/or Adv P Adverbials and dependent clauses can	I can announce it loudly or by using a speaker.

phrases	be conjoined.	
Coordination of prepositional phrases	PP and/or PP Prepositional phrases can also be conjoined.	The test in April and in May is postponed.

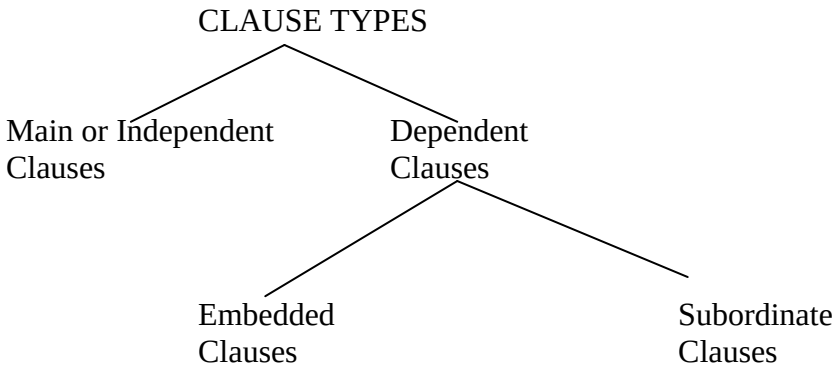
3.3. Clause building Mechanism

Clause building mechanism is dealt under the following heads:

1. Typology of clauses
2. Building of different clauses
3. Co-ordination of clauses

3.3.1. Typology of clauses

The following tree diagram depicts the typology of clauses.



While in co-ordination, the conjoins are equals, in subordination one unit or sentence is embedded in another and it is also dependent on the other. Subordination is s non-symmetrical relation, holding between two clauses in such a way that one is a constituent of the other.

If you are ready, I'll join you.

In this sentence *If you are ready* is the subordinate/dependent clauses embedded in main/superordinate/independent clause *I'll join you*. Complementizers and subordinators are associated with the two distinct kinds of dependent clauses: embedded and subordinate clauses. Both kinds of clauses have a special slot before the subject, one in which the complementizer or subordinator occurs. This slot is known as the COMP slot.

Dependent clause may function as subject, object, complement or adverbial.

Structure	**Function**	**Example**
[That…]NP + VP	Subject	That he is lazy is a fact.
NP V [that…]NP	Direct object	I know that he likes you.
NP BE [that…]NP	Subject complement	The point is that he is your friend
NP + V interrogative clause {IO}+ NP {O}	Indirect object	I gave whoever it was a cup of tea.
Adv clause + S	Adverbial	When we meet I shall explain it.

The clauses which can occur as subjects or objects and can be the arguments of a predicate like noun phrases are referred to as embedded clause.

For Rajan's car to break down would be unfortunate.

The police reported that Rajan's car had broken down

This kind of dependent clause is an argument clause, which has been embedded inside a larger clause. That is why it is called an embedded clause. Those clauses that contain embedded clauses are called container clauses or matrix clauses.

Subordinate clause with subordinators in the COMP slot, differ from embedded clauses in that they are not arguments of a predicate. They are thus not used as subject or objects. In many grammars, subordinate clauses are called adverbial clauses. The rationale is that just as adverbs modify verbs, so these subordinate clauses supply additional information modifying the more general content of the verb in the other clause. Subordinators or subordinating conjunctions are perhaps the most important formal indicators of subordination. Most of the subordinators consist of a single word, and there are numerous compound items also.

Type	**Items**
Simple subordinators	*after, as, because, before, if, once, since, that, although, yet, nevertheless,* etc,
Compound subordinators	*in that, so that, such that, provided (that), now (that), supposing (that), as far as, as long as, so long as, sooner than, rather than, as if, as though, in case*, etc.
Correlative subordinators	*if…then, as…so, more/less…than, as…as, so…as, so…that, no sooner…than*, etc.

Other indicators of subordination are:

1. wh-element

   She knows why I am late.

2. the relative pronoun *that*

   I know that he was not a good man.

3. subject-operators inversion as in

   Had I been there, I would have helped him

   4. nominal *that* clause from which *that* has been omitted

   I suppose you're right

   5. Comment clause, relatable to the main clause

   You're right, I suppose.

Typically, subordinate clauses are classified according to semantic criteria–whether their perspective on the content of the superordinate clause, as indicated by their subordinator, is one of time, location, manner, reason, etc. Here is a listing of subordinate clauses identified as to their perspectives:

Subordinator	**Subordinator + Clause**	**Perspective**
After	after Usha met them	TIME
Before	before Ramu died	TIME
Since	since I last me them	TIME
Until	until we meet again	TIME

When	when you are in love	TIME
While	while they were eating	TIME
Where	where Sujatha wrote it	LOCATION
Because	because Uma was angry	REASON
Since	since You didn't pay me	REASON
as if	as if Usha was sick	MANNER
as though	as though Kannan hadn't seen him	MANNER
so that	so that We'd miss them	PURPOSE
in order that	in order that Rajan would confer	PURPOSE
so as	so as to avoid the police	PURPOSE
in order	in order to avoid the police	PURPOSE
as (many) as	as (many) as Uma had	COMPARISON
More than	more than Uma had	COMPARISON
(tall)er than	taller than Usha was	COMPARISON
(al)though	Although they refused	CONTRAST
Even though	even though she was rich	CONTRAST
Despite	despite (my) hating eggs	CONTRAST
so (that)	so (that) It was a success	RESULT
If	if Raju had read it	CONDITION

Three types of main clauses of subordinate clauses can be structurally identified.

Types	**Structure**	**Example**
Finite clause	A clause whose V element is a verb phrase	As she is ill, she cannot attend her class.
Non-finite clause	A verb whose V element is a nonfinite VP	Having arrived late, he was disappointed.
Verbless clause	A clause containing no V element.	Although very cheerful, Mary has many problems.

Dependent clauses may function as subject, object, complement, or adverbial in the superordinate clause:

Different functions of dependent clause	**Example**
Subject	That she clever is obvious.
Direct object	I know that she is clever.

Subject complement	The truth is that she is not intelligent.
Indirect object	She gave whoever came a cone of ice-cream.
Object complement	I found her tied with problems.
Adverbial	When they meet, he will tell her the truth.

Dependent clause may be nominal clauses, adverbial clauses, adjectival/relative clauses, comparative clauses, or comment clauses.

3.3.2. Building of different types of clauses

The following clauses are dealt here:

1. The nominal clauses
2. Adverbial clauses
3. Adjectival clauses
4. Comparative clauses
5. Comment clauses

3.3.2.1. Nominal/complement clauses

The different kinds of nominal/ complement clauses are tabulated below.

Type	**Subtypes**	**Example**
1. that clause	Functioning as subject	That she is beautiful is true.
"	Functioning as direct object	I told him that she was beautiful
"	Functioning as subject complement	The truth is that they have won the game
"	Functioning as oppositive	Your assumption, that things will improve, is understood.
"	Functioning as adjectival complement	I am sure that things will improve.
2. wh-	Functioning as subject	What he is searching for is a house.

Type	Subtypes	Example
interrogative clause		
“	Functioning as direct object	He wants eat whatever is ready.
“	Functioning as subject complement	He is what I thought of
3.Yes-no interrogative clause	It is formed by *if* or *whether*.	I don’t care if/whether he is available.
4.Nominal relative clause	It can act like nominal wh-interrogative clause. It will be introduced by wh-element.	What he is looking for is a wife.
5. To-infinitive nominal clause	to+V1...	For a boy to do that is strange.
6. Nominal V-ing clause	BE+V-ing...	His hobby is collecting stamps.
7. Bare infinitive	infinitive clause without *to*	All he did was press the button.
8.Verbless clauses	A clause contains no V element	Mosaic flooring in every room is expensive.

3.3.2.2. Adverbial clauses

Adverbial clauses can occur in a final, initial, or medial position within the main clause. The following are the different kinds of adverbial clauses.

Type	Subordinators	Example
Clauses of time	Adverbial clauses of time are introduced by such subordinators as *after*, *since, as soon as*, etc.	When I reached college, classes had begun After I graduated, I went to States.

Type	**Subordinators**	**Example**
Clauses of place	Adverbial clauses of place are introduced by *where* or *wherever*.	The plants grow where there is enough water. He accompanied her wherever she went.
Clauses of condition	Conditional clauses state the dependence of one circumstance or set of circumstances on another. Clauses of condition are introduced chiefly by the subordinators, *if* (positive condition) and *unless* (negative condition). Some compound conditional conjunctions are *provided that, on condition that*, etc.	If you wait, (then) you can meet him. If he performs well, he will win the prize. Unless if rains, the crops will die.
"	***Real and unreal conditions:*** A 'real' condition leaves unresolved the question of the fulfilment or non-fulfilment of the condition. In an 'unreal' condition, on the other hand, it is clearly expected that the condition, on the other hand, it is clearly expected that the condition will not be fulfilled.	1.Real condition If she comes, I'll talk to her. If it rains, the picnic will be cancelled. 2.Unreal condition If she came, I'd talk to her. Had I been there, I'd have congratulated you.
Clauses of Concession	Concessive clauses imply a contrast between two circumstances, i.e., the main clause is surprising in the light of the dependent one. Clauses of concession are introduced	Although he tried hard, he failed. Although he's poor, at least he's happy.

Type	Subordinators	Example
	chiefly by *though* or *although*. Other conjunctions include *while, whereas*, etc.	
Clause of reason or cause	Clauses of reason or cause are most commonly introduced by the conjunctions because, *as*, or *since*.	I could not help her since I didn't have money.
Clauses of circumstances	Clauses of circumstances express a fulfilled condition or relation between a premise (in the subordinate clause) and the conclusion drawn form it (in the main clause). *Because*, *since* and *as* are the conjunctions used.	Since the rain has stopped, we shall go out. As it was dark, she hesitated to go out.
Clauses of purpose	Clauses of purposes are adjuncts, introduced by (*in order*) (*for*_N) *to, so as to* Finite clauses of purpose may be introduced by *so that*, *so*, or *in order that*..	He walked fast, to catch the train She studied hard, so as to get the scholarship. He worked hard, so that he could succeed. We eat well, in order that we may be healthy
Clauses of result	Result clauses are factual and are introduced by *so that, such…that, so…that*.	He practiced well, so that he could perform well. The dog barked so loudly that the thief fled.

3.3.2.3. Adjectival clauses

Adjectival clauses or relative clauses are clauses linked to a noun in their container clause, frequently with a WH form like the relative pronoun *which* and *whom*. As relative clauses qualify an NP and hence perform the function of an adjective. Thus, the relative clause in the following sentence

The girl who is clever

does the function of the adjective *clever*, in the following phrase

The clever girl.

It is introduced by a relative pronoun (*who, whom, whose, which, that*) or relative adverb (*where, when, why*).

This is the boy who wrote the story

Show me the book that you bought yesterday.

The noun/pronoun to which the clause is related is called its antecedent, as the boy and the book in the sentences given above. The relative pronoun/adverb is sometimes omitted.

Show me the book you bought yesterday.

This is the boy I met at the party.

English makes use of relative pronouns to form relative clause. The relative clause is an example of post modification. The head noun will be modified by the following relative clause. The relative clause together with the noun it modifies forms a noun phrase. The relative pronouns *who* and *which* are followed by a verb or verb phrase. The agreement is on the basis of a two-term gender system, personal and non-personal.

Joan, who…

The boy who…

The people who

The human being who…

The fairy who…

London, which…

The box which…

The animals which…

The human body which…
The unicorn which…

The position of relative construction is determined by the VO constituent. They regularly follow nouns, avoiding in this way disruption of the verb-object constituent. The relationship of relative constructions to their antecedents is so clear that if an object is the shared noun of the relative clause no marker is needed; *which* or *that* is often omitted, as after rules in the following examples:

All because they would not remember the simple rules their friends had taught them.

English relative constructions may be restrictive, as in the first in the following example, or descriptive, like the second.

The only two creatures in the kitchen, that did not sneeze, were the cook, and a large cat, which was lying on the hearth and grinning from ear to ear.

The distinction between restrictive and descriptive relative clauses is maintained for other nominal modifiers as well, such as the participles in the following examples:

There stood the Queen in front of them, with her arms folded, frowning like a thunderstorm. (Descriptive)
With tears running down his cheeks, he went on again. (Restrictive)

The contrast also applies to adverbial clauses. The temporal clause in the first sentence is restrictive, while *that* in the sentence is descriptive.

3.3.2.3.1. Restrictive and non-restrictive relative clauses

Relative clauses typically differ from other embedded clauses in having one constituent missing or, if it includes a relative pronoun, out of its expected order. There are two major types of relative clauses in English. Restrictive relative clauses are embedded clauses used to identify a noun phrase referent by providing further

information to narrow down the reference; apposite or non-restrictive relative clauses also provide additional information about a noun phrase referent that has already been adequately identified, so the new information is not needed for identification.

1. Restrictive relative clauses
   Men who live in villages are healthy
   My brother who is in Delhi is an architect.

2. Non-restrictive relative clauses
   Men, who are mortal, often forget it.
   My brother, who is in Delhi, is an architect.

3.3.2.3.2. Case in relative clauses

Case is used to indicate the status of the relative pronoun in relative clause There are two situations to consider. First, if the pronoun is in a genitive relation to a noun head, the pronoun can have the form *whose*.

The woman whose daughter you met is Mrs. Brown
The house whose roof was damaged has now been repaired.

Secondly, with a personal antecedent, the relative pronoun can show the distinction between who and whom, depending on its role as subject of the relative clause or as the object of verb or preposition in it.

The girl who spoke to him.
The girl whom he spoke.
The girl who (m) he spoke to.
The girl who (m) he met.

3.3.2.3.3. Relative pronoun as adverbial

The relative pronoun can have a special form as adjunct of place, time, and cause in the relative clause.

That is the place where he was born.

That is the period when he lived here.

That is the reason why he spoke.

3.3.2.4. Comparative clauses

In a comparative construction a proposition expressed in the superordinate clause is compared with a proposition expressed in the subordinate clause, by a correlative sequence, equational like as…as, or differentiating like *less…than*, *more…than*.

Rosy is as healthy as her sister.

Jasmine is less healthy than her sister.

There are comparative constructions with *enough* and *too*, which convey the contrasting notions of 'sufficiency' and 'excess' and which are related through negation. Paraphrases pairs may be constructed, as follows:

This shirt is too small for me (to wear)

This shirt is not big enough for me (to wear).

The following table lists the different types of comparative elements used in English.

Comparative elements in English	**Meaning**	**Examples**
As….as so…as	Similarity	She is as clever as her brother.
Than	Dissimilarity	She is cleverer than her brother.
Less…than	Dissimilarity	She is less clever than her sister.
More …than	Dissimilarity	She is more intelligent than her friend.

3.3.2.4.1. Comparative clauses of quality

The following table shows the different types of comparative clauses of quality.

Adjectival pattern	**Degrees**	**Examples**
NP + BE + as + positive form of adjective + as + NP	Similarity Positive degree	Uma is as beautiful as Usha.
NP + BE + more + adjective + than + NP	Dissimilarity Comparative degree	Uma is more beautiful than Usha.
NP + BE + Comparative degree form of adjective + than + NP	Dissimilarity Comparative degree	ex. Raja is taller than Ramesh.
NP + BE + the + Superlative degree form of adjective + among all	Dissimilarity Superlative degree	Raja is the tallest among all.

3.3.2.4.2. Comparative clauses of quantity

The following shows the different types of comparative clauses of quantity.

Patterns	**Degrees**	**Examples**
…NP…+ HAS + as + many + NP + as …	Positive degree Clause of similarity	Ram has as many shirts as Sam has.
NP…+ HAVE + more + NP + than + NP + HAVE	Comparative degree Clause of difference	Ram has more shirts than Sam has.

3.3.2.4.3. Comparative clauses of adverbs

Adverbial comparative construction varies based on the three degrees of comparison. The three forms of adverbs, positive, comparative and superlative forms, can be referred from the DEWA.

Clause patterns	**Meaning**	**Examples**
With the positive form *as...as* in the affirmative and *as/so...as* in the negative are used	Positive degree	Uma shouted as loudly as she could. It didn't cost her so much, as she feared.
With comparative form *than* is used.	Comparative degree	Uma walks faster than Usha. Kannan screamed louder than I expected.
Superlative degree: With superlative it is possible to use *of* + noun	Superlative	Usha worked hardest of the labourers.

3.3.2.5. Comment clauses

Comment clauses are somewhat loosely related to superodinate clauses, functions as disjuncts or conjuncts. They may occur initially, finally or medially, and have separate tone units. They occur in various forms.

Sr. no.	**Type**	**Example**
1	A main clause	I believe, nobody was there.
2	An adverbial clause	He is a rebel, as you know.
3	A nominal relative clause	What's more, they were robbed.
4	A to-infinitive clause	I am innocent, to be

Sr. no.	Type	Example
		honest.
5	An ing-clause	I fear, speaking as an expert, if this is right.
6	ed-clause	Stated bluntly, he has no manners.

3.3.3. Clausal co-ordination

There are three coordinators in English, *and, or,* and *but*, used for linking clauses or sentences together. The clause coordinators occur clause initially.

Sam sings well and his sister dances well.

The clause beginning with coordinator cannot be moved in front of the preceding clause.

They are aboard on a tour, or they are at home.

The clause beginning with *or* cannot be moved to front *and* and, *or* can link more than two clauses, and all but the final one can be omitted.

Sam will come, do this work, and rest here.

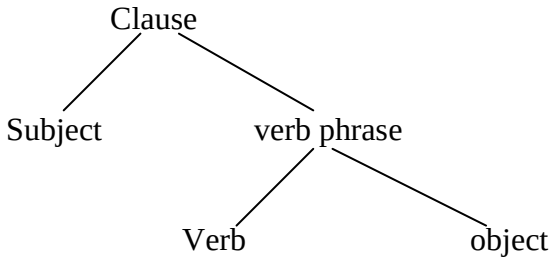
3.4. Sentence building mechanism

The sentence building mechanism is dealt under two heads:

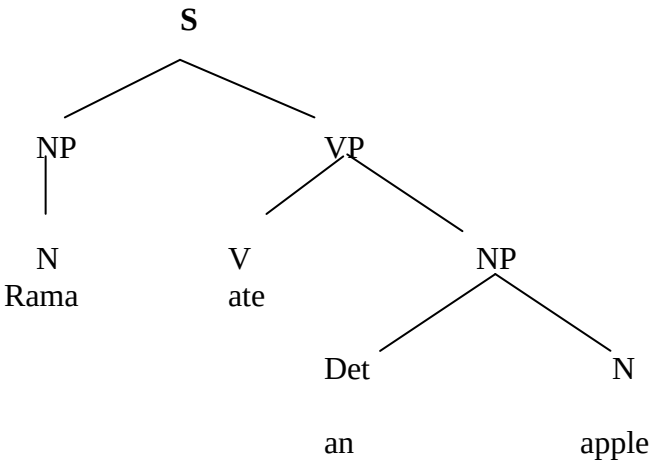
1. Word order
2. Building of different types of sentences

3.4.1. Word order

Word order is a term used in grammatical analysis to refer to the sequential arrangements of words or linguistic units. English relies on word order as a means of expressing grammatical relationships within constructions. English has fixed word order and so is called configurational language. The core of the configurationality issue is about the question of special grammatical relation of subject and a different one of object, whatever these relations correspond to different positions in the hierarchy of the sentence. It has been established well that in English there is a syntactic VP node and the object is decided by its position.



Rama ate an apple



The order of morphemes in word structure tends to be fixed. Morphemes tend to be positionally bound. The higher we move in the hierarchy of units, the more freedom we have in the ordering of constituents. Word order refers to the order of constituent structure of linguistic units. Each constituent represents a complex set of features. The ordering of the constituents may be linear or sequential, discontinuous or fused.

1.SVO linear

Mohan has read this book.

2.Aux. + SVO order which is discontinuous

Has Rajamani read this book?

3.Fused order

read = 'V + Past participle' is fused into read

English is an SVO language, meaning that the verb tends to come between the subject and object. The illustration exemplifies that English sentence which is in SVO order becomes Aux. + SVO which is a discontinuous order.

English is a highly consistent SVO language shows the following characteristics:

1. English being an SVO language has prepositions.
2. The government constructions observe SVO patterns, as do the nominal modifying constructions – with the exception of descriptive and limiting adjectives in an archaic order.
3. As a consistent language, English exemplifies characteristic features of SVO languages, such as many patterns that have been developed in the verbal modifying constructions, the wide use of substitutes, and the grammatical processes used to highlight elements of sentences.
4. The verbal patterns make heavy use of auxiliaries, which are also involved as substitutes and in interrogative and negative constructions. The grammatical process involves function words, again in distinctive constructions like clefting.

5. Simple, unmarked clauses in English agree with the SVO pattern, and require representations for the three constituents: subject, verb, and object. Neither the subject nor the verb nor the object of a transitive verb may be omitted.

Uma folded her hands.

*Her hands Uma folded.

6. English does not permit any order other than the above in unmarked sentences occurring as single utterances. This constraints applies also in subordination, as in the following sentence:

Kannan shouted while Uma folded her hands.

7. The verbal qualifiers must precede verbs. This position conflicts with the optimum position for subjects. To express negation, for example, the negative element might be prefixed to the verb.

Uma does not fold her hands.
*Uma folded not her hands.

8.Government operates strongly in English, both in predicates and in other government constructions.

Her hands are folded.
Two of her hands are folded.

9. In comparison of inequality the adjective precedes the standard.

Uma is more beautiful than Usha.

10. In titles, the name follows, functioning like a standard for the 'variable' title.

Queen Diana.

11. In personal names, the surname follows as standard to the given name.

John F. Kennedy.

12. In numerals in the teens, the form of ten follows, as in the other constructions of this kind furnishing a standard for the simple numerals from three to nine.

Thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen.

13. English has been characterized by functional syntacticians as a language in which the initial segment, or theme, often using old material, sets the scene for the new material, or rhyme.

Uma folded her hands.

14. The subject *Uma* is one of the important elements of the preceding discourse, while the predicate *folded her hands* introduces a new action. SVO order provides a convenient basis for such organization of sentences.

Seven types of basic sentential structures can be identified in English.

Sr. no.	Type pattern	Example
1.	SVA	Arul is in the hall.
2.	SVC	Arul is clever.
3.	SVO	Arul threw the ball.
4.	SVOA	Arul kept the ball on the table.
5.	SVOC	Arul has proved her wrong.
6.	SVIOO	Arul taught her music.
7.	SV	The baby cried.

(Here in this context A = Adjunct, C = Complement, IO = Indirect Object, O = Object, S = Subject, V= Verb,)

3.4.2. Building of different types of sentences

Traditionally sentences in English have been classified based on the complexity of the clauses and also on the basis of the function. Though this traditional classification can be set aside in a rigorous structure oriented analysis, the classifications do have indirect bearing on our understanding of word building mechanism in English. That is why they have been dealt here.

3.4.2.1. Sentence types based on the complexity of clauses

Traditionally sentences are classified as simple, compound and complex. This distinction is based on the criterion whether the sentence contains a single verb or verb phrase or more than one verb or verb phrase. It has been explicated traditionally that a simple sentence contains at least one verb or verb-phrase; compound and complex sentences contain more than one verb or verb phrase. Accordingly simple sentences have only one finite verb, compound sentences have two or more finite verbs and complex sentences have one finite verb and one or more non-finite verbs.

1.Simple sentence

He goes to market

2.Compound sentence.

He went to market and bought some vegetables.

3.Complex sentence

He is going to market to buy vegetable.

A simple English sentence is built of two primary constituents, NP and VP. So a sentence in English can be parsed as consisting of NP and VP.

S $\leftrightarrow$ NP + VP

In a compound sentence one sentence is coordinated with another sentence and in a complex sentence one or more sentences are subordinated under a matrix sentence. Coordination and subordination have been dealt earlier.

3.4.2.2. Sentence types based on their function

Traditionally sentences have been classified into five types based on their function.

Structure	**Sentence type**	**Example**
NP + VP	Affirmative or assertive sentences	He went to market.
Question word/ auxiliary + NP + VP	Question or interrogative sentences	Is he going to market?
NP + not + V	Negative sentences	He is not going to market
V1	Imperative or command sentences	Go to market.
Exclamatory words …	Exclamatory sentences	How beautiful the building is!

This traditional classification of sentences into assertive, interrogative, negative imperative and exclamatory has been dealt elaborately in speech art theory, where various communicative functions have been identified and classified accordingly. We have not elaborated this communicative function here.

3.4.2.2.1. Building of affirmative or assertive sentences

Assertive statements follow the regular order of subject, verb and object in English. The phrase structure of assertive sentences can be given as NP + VP in English as they have only one finite verb. They may be called minimal sentences. Minimal sentences can be distinguished into two types:

1. Equative type

She is a beautiful girl.

2. Non equative type

She bought a book.

3.4.2.2.1.1. Building of equative sentences

In equative type of sentences, a linking verb (LV) links the subject and the complement. The equative sentences can be parsed as follows.

S ↔ NP+LV+NP/Adj./Adv.

The link verb (LV) could be a BE verb (abbreviated as BV; ex. *is, am, are, was, were, will be, shall be*) or copulative verb (abbreviated as CV; ex. b*ecome* etc.)

S ↔ NP + BV + NP /Adj. / Adv.

She is a pilot.

Kamala is intelligent.

She is there.

S ↔ NP + CV + NP / Adj.

He became a teacher

He remains poor

The mango tastes sweet.

The verbs such as *become, remain, taste*, etc. which equate the subject with adjective have been classified as equatives.

3.4.2.2.1.2. Building of non-equative sentences

The following are the different types of non-equative sentence patterns:

Sr. No.	Pattern type	Example
1	S ↔ NP + Vi	The butterfly flies.
2	S ↔ NP + Vi + Adv.	The car reached late.
3	S ↔ NP + Vt + NP	John wrote a letter
4	S ↔ NP + Vt + NP + NP	John gave her a purse.
5	S ↔ NP + V (have type) + NP	Kamakshi has three airplanes.

(Vi = intransitive verb; Vt = transitive verb)

3.4.2.2.2. Building of interrogative sentences

It is expressed by inverting the order of words, using interrogative words which are often classified as interrogative adjectives, interrogative adverbs, and interrogative pronouns.

ex. Is he going?

Apart from word order even tone also expresses interrogation.

ex.

You have my address?

In writings, either the word order + the question mark at the end or merely the question mark denotes the interrogative sentences. Based on the reply, the question evokes, the interrogative sentences can be classified into two types.

1. Those that may be answered with *yes* or *no* (yes-no question)
2. Those that introduces ‘wh’ words. (Wh- questions).

3.4.2.2.2.1. Yes-no interrogatives

Yes-no interrogatives are those questions for which the answer is either *Yes* or *No* i.e., affirmation or rejection. Yes-no question is formed by fronting the auxiliary and giving the sentence a rising intonation. The auxiliary (the tense and the auxiliary element that immediately follows it) is moved from the position after the subject NP to the front of the subject NP by the inversion of the subject and the auxiliary. Only the auxiliary element (modal, *have*, or *be*) to which the tense is attached moves with the tense to the front of the subject NP. Yes-no questions can be classified into three types and can be assigned three types of parsed structures.

Type	**Pattern**	**Example**
1.'Be' verb questions	BE + NP + VP	**Is she a teacher?** Is her voice sweet? Was he there?
2. Questions with modal Auxiliaries	Modal + NP + VP	Can she sing? Should I go? Must I sing? Dare you question me? May I use your pen please? Can he be a doctor?
3. Questions without 'be' verbs and modals	DO + NP + VP	Did Uma go to school?

When no optional element has been picked from the auxiliary and the main verb is not 'be', we must use slightly different version of the yes-no question switch rule. In this version, the only thing that is moved to the first position of the sentence is the tense. The traditional transformational generative grammarians called this as 'do insertion transformation'. According to this version, two types of transformations are applied. The first is 'Tense + Auxiliary Fronting Transformation' and the second is 'Do Insertion Transformation'.

He comes.

Does he come?

Uma went to Belgium

Did Uma go to Belgium?

3.4.2.2.2.2. Wh-interrogatives

'Wh' questions are introduced by interrogative pronouns, adjectives or adverbs. For all such questions the answers expect a piece of information. Such questions are called pronominal questions.

1. Who goes to college?
2. Whom do you want?
3. Whose question is this?
4. What is your problem?
5. Which is the correct answer?
6. How much is the apple?
7. Why did he do that?
8. Where did he go?

Wh-questions are so named because they contain question words that, with the exception of *how*, begin with WH. The wh-question word occurs normally at the beginning of the clause and may be part of the question phrase.

For what reason?

Whose apple?

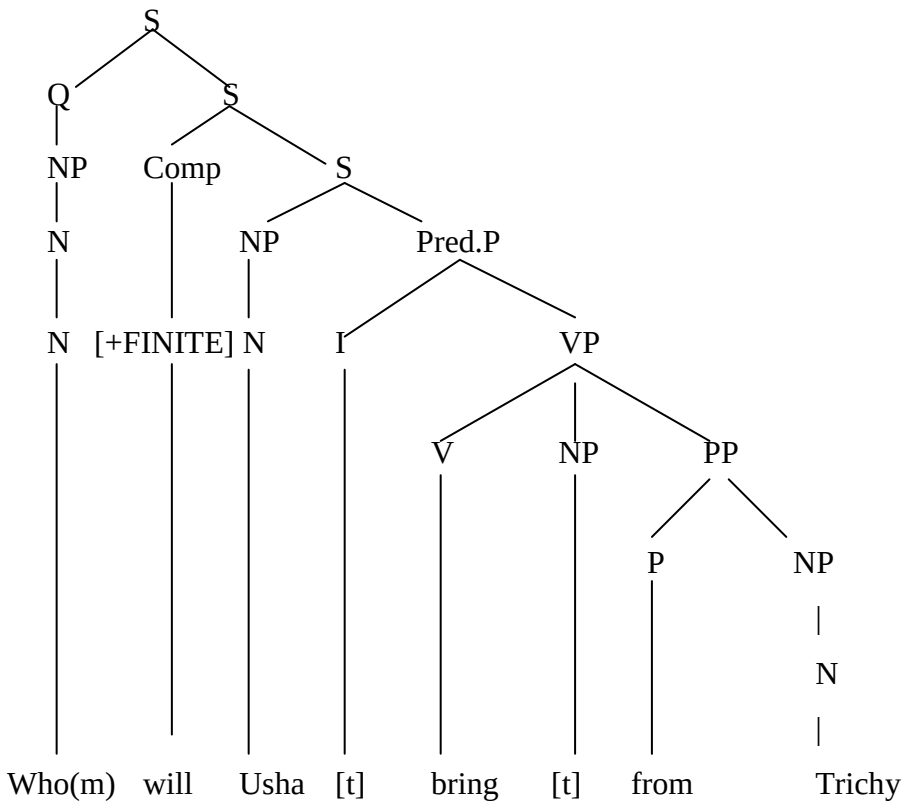
In contrast to yes-no questions, which ask about an entire proposition, equative questions ask information about an argument of a predicate or about semantic domains like time, place, and manner. Following list shows some of the semantic domains along with 'wh' words and phrases which are used to ask for information about them.

Time	**Place**	**Person**	**Non-Human**	**Manner**	**Reason**	**Quantity**
when, at what time, on which day	Where, at what place, in which town, to which country etc.,	Who, by whom, with which friends, whose have etc.	What, which, with what etc.	how, in what way. in which way, by what means, etc.	why, for what and which reason etc	how much, how long, how many, how clear, etc.

The structure of ‘wh’ question sentences can be understood by comparing the structure of declarative sentences with that of ‘wh’ question sentences.

Usha will bring her mother from Trichy.
Usha will bring who (m) from Trichy?
Will Usha bring who (m) from Trichy?
Who will usha bring from Trichy?

The present day generative paradigm considers the formation of ‘wh’ question sentences from a deep structure by ‘wh’ movement. This can be depicted by a constituent called trace (t) as follows.



In the similar manner, the structure of following sentences can be understood by comparing their respective declarative sentences that is their deviant structure can be understood from the representation of the deep structure in terms of core structure.

Where will Usha (t) bring her mother from (t)?

↓

Where will Usha bring her mother from?

Who will (t) (t) bring her mother from Trichy?

↓

Who will bring her mother from Trichy?

Note that in the second type, although the linear order of the constituent is exactly the same as if neither the operator nor the 'wh' word had moved, the hierarchical structure is different.

3.4.2.2.2.3. Interrogative determiners and pronouns

In the noun phrase, the interrogatives *which* and *what* can act as both determiner and pronoun and can have both personal and non-personal reference. The different interrogative determiners and pronouns are given in the following table.

	DETERMINERS	PRONOUNS	
	Personal and non-personal	Personal	Non-personal
Subjective case	What, Which	Who, What, Which	What, Which
Objective case		whom	
Genitive case	Whose		
Interrogative …+ Preposition	What, Which … + preposition	Who, whom …+ preposition	What, Which …+ preposition

Preposition + interrogative	Preposition + What, Which	Preposition + whom	Preposition + What, Which

3.4.2.2.2.4. Interrogative adverbs and conjunctions

Besides interrogative determiners and pronouns, there are interrogative adverbs and conjunctions. The following table gives the different types of interrogative words used as adverbs and conjunctions.

Meaning	**Interrogative words**	**Examples**
Place at or place to	Where	Where is he staying? Where are you going on your vacation?
Time	When	When are you leaving?
Cause, reason, and purpose	Why	Why are you going there?
Manner, means and instrument	How	How often does he see her? How much money do you have?

3.4.2.2.3. Building of negative sentences

Negative is a process or construction in grammatical and semantic analysis which typically expresses the contradiction of some or all of a sentence's meaning. In English grammar, it is expressed by the presence of the negative element *not* or no. In Lexis, there are several possible means of negation. For example, the prefixes such as *un*, *non*, *in*, *dis* are used to derive negative words from positive words.

ex.

Positive words	**Negative words**
tolerable	intolerable
popular	unpopular
human	non human
obey	disobey

3.4.2.2.3.1. 'Not' negation

Not is an important negative element in English. To bring negative meaning *not* has to be placed after the auxiliary verb or 'be' verb. When there is no other auxiliary, *do, does, did* have to be used with *not*.

Type	**Positive**	**Negative**
I With 'be' verb	Her parents are in Madras. He is angry.	Her parents are not in Chennai. He is not angry.
II With auxiliary verb	I have eaten an apple. I will see 'Hay Ram'. I can buy a car. She is teaching.	I haven't eaten an apple. I will not see 'Hay Ram'. I cannot buy a car. She is not teaching.
III Without auxiliary verb	He went to Chennai. He goes to market. You pay the fees.	He did not go to Chennai. He does not go to market. You don't pay the fees.

For negative questions, negative *not* appears at the beginning of the sentence; with modal auxiliary, *BE* verbs and *DO* forms. In the negative yes / no questions the auxiliary along with negative element is placed first by applying fronting movement. In the case of negative 'wh' questions. It will be as same as the 'wh' question with the introduction of 'wh' element.

Type	**Positive question**	**Negative question**
Yes-no question with auxiliaries	Is he coming today? Has he done the work?	Isn't he coming today? Is he not coming?

	Will he come tomorrow?	Hasn't he done the work? Has he not done the work? Won't he come tomorrow? Will he not come tomorrow?
Without auxiliary	Did Usha go home?	Didn't Usha go home?
Wh-question	Who will approve it? Whose mother came here?	Who will not approve it? Whose mother did not come here?

3.4.2.2.3.2. Negation by negative pronouns

Negative sentences can be formed by making use of negative pronouns and determiners. The following table will show the use of negative pronoun and determiners.

Number	**Function**	**Count**		**Mass**
		Personal	**Non – personal**	
Singular	Pronoun	No one, nobody None (or)	Nothing	None (of)
	Pronoun and determiner	Neither (or)		
Plural	Pronoun	None (or)		
Singular and Plural	Determiner	No		

Use of no one / nobody

Positive	Negative counterpart
He knows when is she going	No one / nobody knows when is she going
He has finished the work	No one / No body has finished the work

Use of none

None (not one) is used as a countable as well as uncountable (not any) pronoun.

	Positive	**Negative**
Countable	One of us speaks Malayalam	None of us speaks Malayalam

Non Countable	He looks fresh It is ripe He has arrived	None looks fresh None is ripe None has arrived

To express addition negatively

Nobody has come yet

No one has come yet

None has come yet

None have / has come yet

None of the students has / have failed

Neither of the (two) students has failed

Nothing has happened yet

Nothing of this has come about

Neither of the accusation is true

That is none of your business

3.4.2.2.4. Building up of imperative sentences

Imperative sentence is one with no overt subject noun phrase. It usually contains imperative form of a verb. The imperative is used in request, which according to circumstances may range from brusque commands to humble entreaties, the tone generally serving as a key to the exact meaning. The following table shows the expression of imperatives in different contexts:

Structure	**Context**	**Example**
V1	In the second person by the imperative form of verb or by *shall* with the infinitive. Emphasis is conveyed by *do* with the infinite.	Get lost. Cook well. He shall cook Shut the door, please. Do read your lesson well.
V1… (third person)	In the third person with virtually the second person meaning.	Come here John. Wash and dry the clothes, please.
Let + third person	In the third persons by *let* with the	Let us fly away.

+ V1	infinitive	Let him study abroad. Let there be light.
Negative word + you + V1	With negative adverbs and negative words	Never you mind Don't you do it?

The colloquial phrase *mind you* can be added list of imperative types. It functions like a tag to another sentence. In the example cited above the subject pronoun follows the imperative.

I have no money to spend extra, mind you.

3.5. Summary

We have understood the architecture of sentence building mechanism of English and there by identified the ways by which parsing can be performed on the English text and get the needed parsed tree for lexical and structural transfer. We have studied the word building, phrase building, clause building and sentence building mechanisms of English. We have explored the items and their arrangement in NP, VP, Adj. P, Adv. P and PP. We have identified all the sentential patterns of English. With the help of these patterns it is hoped to parse an English sentence in terms of words, phrases and clauses. As a result we will get parsed trees that can be converted into Tamil-oriented parsed trees that are liable for structural and lexical transfer.

CHAPTER 4

ARCHITECTURE OF SENTENCE BUILDING MECHANISM IN TAMIL

4.0. Introduction

The aim of this chapter is to understand the architecture of sentence building mechanism of Tamil so that the difference between the sentential structure of English and Tamil can be correlated so as to understand the mechanism of transferring the source language structure into target language structure. As in the case of English, this chapter will be dealt under the following headings.

1. Word building mechanism
2. Phrase building mechanism
3. Clause building mechanism
4. Sentence building mechanism

4.1. Word building Mechanism

The following form classes have been identified in Tamil:

5. Noun
6. Verb
7. Adjectives
8. Adverbs

The following function classes have been identified:

5. Pronouns
6. Prepositions
7. Determiners (Ordinals, Quantifiers, Demonstratives)
8. Conjunctions (Coordinating conjunctions & Subordinating conjunctions)
5. Auxiliary verbs

From the lexical information available in terms of meaning of the content word (stripped of from inflectional and productive derivational suffixes) and the inflectional and

derivational meaning, words will be built for Tamil. For example, *went* of English will have the following information available for lexical transfer:

went = go + past + third person neuter singular

The transfer dictionary (i.e. bilingual dictionary) gives the equivalent the core of the inflected word *go* as *poo;* the inflectional meaning 'past' will be added with *poo* resulting in the form *poon-*; the agreement information 'third person neuter singular' results in the formation of *poonatu* 'it went'. A transfer dictionary consisting of a bilingual dictionary of core words complemented by rules to derive both inflectional and derivational forms from the semantic features has been built to serve our purpose.

4.1.1. Building of inflected forms of nouns

Nouns can be inflected for number and case. An inflected noun form may be the phonemic realization of the three morphemes, the formation of which can be given as follows:

Noun+(Number)+(case)
Maram+kaL+ai > marangkaLai 'tree_Plural_ACC

The correct representation of an inflected form of a noun involves the following pattern of formation.

Noun stem+ (plural suffix) + (oblique suffix) + euphonic suffix+case suffix
maram+ *kaL*+Euphonic+aal
tree_Plural_Oblique_Instrumental
mara-tt-in-aal
tree_Oblique_Euphonic_Instrumental

The following table depicts the case forms Tamil:

Case form	**Case suffix/bound postposition**	**Example**
Nominative	Zero	*maram* 'tree'
Accusative	-ai	*maratt*-ai
Dative	-ukku~ -kku ~ -ku	*mara*-tt-ukku
Instrumental	-aal	*mara-tt-aal*
Sociative	-ooTu, -uTan	*mara-tt-ooTu*
Locative	-il, -iTam	*marattil, avan-iTam*
Ablative	-irundtu	*mara-tt-il-irundtu*

4.1.2. Building of inflected forms of verbs

Verbs in Tamil inflect for tense, negation, person, number, gender, adjectival form and adverbial form. There are three tenses in Tamil, past tense, present tense and future tense. Tamil makes use of tense markers for expressing tense. There are a set of past tense markers, a set of present tense markers and a set of future tense markers. The alternate markers are conditioned, phonologically and morphologically. The finite verbs and non-finite verbs in Tamil are inflected forms and the following patterns emerge out.

<u>Finite verb</u>

1.Verb root + tense marker + PNG

2. Verb root + negative + PNG

<u>Non-Finite verbs</u>

Verb + infinite marker

<u>Past participle forms</u>

Verb + tense + past participle

Verb + negative + participle

<u>Conditional</u>

Verb + conditional marker

<u>Relative Participle forms</u>

Verb + past tense + relative participle

Verb + present tense + relative participle

Verb + future tense + relative participle

Verb + negative + relative participle

Pronomilized forms

Verb + past tense + relative participle + PNG

Verb + present tense + relative participle marker + pronoun

Verb + future tense + relative participle marker + pronoun

The following is the verb paradigm table for the verb *ezhutu* 'write':

Person	*Present*	**Past**	**Future**
First person	*ezhutu-kiR-een*	*ezhutu-in-een*	*ezhutu-v-een*
Second person	*ezhutu-kiR-aay*	*ezhutu-in-aay*	*ezhutu-v-aay*
Third person masculine	*ezhutu-kiR-aan*	*ezhutu-in-aan*	*ezhutu-v-aan*
Third person feminine	*ezhutu-kiR-aaL*	*ezhutu-in-aaL*	*ezhutu-v-aaL*
Third person neuter	*ezhutu-kiR-atu*	*ezhutu-in-atu*	*ezhut-um*
Third person masculine, feminine	*ezhutu-kiR-aar*	*ezhutu-in-aar*	*ezhutu-v-aar*
First person plural	*ezhutu-kiR-oom*	*ezhutu-in-oom*	*ezhutu-v-oom*
Second person plural	*ezhutu-kiR-iirkaL*	*ezhutu-in-iirkaL*	*ezhutu-v-iirkaL*
Third person plural masculine, feminine	*ezhutu-kiR-aarkaL*	*ezhutu-in-aarkaL*	*ezhutu-v-aarkaL*
Third person plural neuter	*ezhutu-kinR-ana*	*ezhutu-in-an*	*ezhut-um*

The transfer dictionary takes care of the transfer of V + inflections/derivation from English into Tamil.

4.2. Phrase building mechanism

The building mechanism of the following five major phrases along with their

coordination has been dealt here.

1. Building of noun phrases
2. Building of verb phrases
3. Building of adjectival phrases
4. Building of adverbial phrases
5. Building of postpositional phrases
6. Coordination of phrases

4.2.1. Building of noun phrases

An NP may be built up of a noun, pronoun or demonstrative pronoun, which forms the head of the construction.

raajan irukkiRaan - *raajan* is a noun

'Rajan is there'
avan ippozhutu varallam - *avan* is a pronoun
'he may come now
ivaikaL puukkaL aakum - *ivaikaL* is a demonstrative pronoun
'these are flowers'

4.2.1.1. Constituents of noun phrases

The following items may precede the noun that heads an NP:

1. Determiners
2. Ordinals
3. Quantifiers
4. Adjectival phrase
5. Classifier

Predeterminers that come before determiners are not found in Tamil. Of course in Tamil the relative clause can come before determiners.

Item	**Arrangement**	*Example*
Determiners	Det + N ↔ NP	*andta meejai 'that table'*

Item	**Arrangement**	*Example*
The demonstrative pronouns (*indta* 'this', *andta* 'that') possessives (*en 'my', un* 'your', *avaLuTaiya* 'her') and the wh-words (*endta* 'which') are grouped under determiners (only when they precede nouns).		*oru nduul* 'a book' *avanuTaiya nduul* 'his book' *indta nduul* 'this book'
Ordinals *onRaavatu* 'First', *iraNTaavatu* 'second', *muunRaavatu* 'third', etc. which denote the order of the items in a series are ordinals in Tamil. *mutal* is synonymous with *onRaavatu* 'first'	In an NP ordinals can follow determiners. Ord + N ↔ NP	mutal vakuppu 'the first class' *avaruTaiya muunRaavatu makan* 'his third son'
Quantifiers *pala* 'many, several', *cila* 'a few', *onRu* 'one', *iraNTu* 'two' are quantifiers which specify quantity or number in Tamil.	In an NP the ordinals can be followed by the quantifier. If there is no ordinal, the determiner is followed by the quantifier. Ord + Quan + N ↔ NP	*mutal muunRu paaTalkaL* 'first three songs' *avanuTaiya pala tavaRukaL* 'his many mistakes'
Approximates In Tamil approximates (Appr.) such as kiTTattaTTa, eeRakkuRaiya, etc. come quantifiers to approximate the quantity**.**	Appr + Quan + N ↔ NP	*eeRakkuRaiya aayiram peer andat pooTTiyil pangkeRRaarkaL* 'Approximately thousand persons participated in the competition'
Limitizers	NP + *maTTum*	*umaa maTTum ndeeRRu*

Item	**Arrangement**	*Example*
In Tamil the limitizers such as *maTTum*, maattiram, etc. occurs after nouns to limit the nominal reference.		*vandtaaL* 'Uma only came yesterday'
Adjectival phrase Adjectival phrase is a phrase that functions as an adjective.	Adj P + N ↔ NP	rompa azhakaana peN 'a very nice lady' *pala azhakaan vaLaindta vaTivangkaL* 'many beautiful carved figures'
Classifier The classifier, which is a noun or a sentence that functions as an adjective as found in English is found in Tamil too.	Class + N ↔ NP	*kalaik kalluuri* 'Arts College'
Relative Clause An NP in Tamil may be built of a relative clause (i.e. a clause that has an adjectival function) and N.	RC + N ↔ NP	*KaTaici ilaiyai varNampuuciya manitan* 'the man who painted the last leaf' *paricu venRa paiyan* 'the boy who won the prize'

Thus an NP can be built in the following way.

Det + Ord + Quant + Adj P + Class + N ↔ NP

ex.

andta mutal pattu aRivuLLa paiyankaL 'that first ten clever boys'

andta mutal pattu ciRandta kalaikalluurikaL 'that first ten good arts college'

anta azhakaana puukkaL 'those beautiful flowers'

ellaa pukazhpeRRa manitarkaL 'all the famous men'

andta kaTavuLaal capikkappaTTa iTam 'that God-forsaken place'

4.2.1.2. Patterns of noun phrases

At least the following patterns can be identified in Tamil.

Type	Pattern	Example
1	Poss P. + NP ↔ NP	*ennuTaiya maaman makaL* 'my uncle's daughter'
2	Relative clause + NP ↔ NP	*neeRRu ndaan paartta paiyan* 'the boy whom I saw yesterday'
3	*enRu*-clause ↔ NP	*avaL paTittavaL enRu elloorukkum teriyum* 'that she is educated is known to all'
4	*enpatu*-clause ↔ NP	*avan ndallavan enpatu elloorukkum teriyum* 'that he is good is known to all'
5	*enRa*-clause ↔ NP	*avaL pooyviTTaaL enRa ceyti* 'the news that she had left'
6	Det + Compound noun ↔ NP	*oru cinimaa ndaTikai* 'one film female star'

4.2.2. Building of verb phrases

The verb phrase is built up of a verb, which is the head of the construction. Verb occurs as predicates in the rightmost position of a clause. As predicates they select arguments (ex. subject, direct object, indirect object and locative NPs) and assign case to their arguments and adverbial adjuncts. Another syntactic property of verbs in Tamil is that they can govern subordinate verb forms. Verbs occurring as finite verbs in clause final position can be complemented by non-finite verb preceding them. The latter with respect to the interpretation of tense or subject governs these non-finite forms, being subordinate to the finite verb form. If we follow the traditional idea of having a VP node for Tamil, then all the elements, except the subject NP, will have to be grouped under VP.

4.2.2.1. Constituent structure of verb phrases

The constituents which come under VP i.e. that are headed by V can be listed as follows:

1. Adverbial Phrase

avan veekamaaka vandtaan

he fast come_PAST_he

'he came fast'

2. Case Phrase

kaNNan raataiy-aip paarttaan

Kannan Radha_ACC see_PAST_he

'Kannan saw Radha'

3. Post Positional Phrase

puli avaL meel paayndatu

tiger she on jump_PAST_it

'The tiger jumped over her'

4. Verbal participial Clause

caappiTTuviTTuc cenRaan

eat_PAST_PAR_leave_PAST_PAR go_PAST_he

'having eaten food he went'

5. Infinitive Clause

caappiTac cenRaan

eat_INF go_PAST_he

'he went to eat'

6. Conditional Clause

veelai irundtaal varuvaan

work be_PAST_CON come_FUT_he

'he will come if there is any work'

7. Concessive Clause

mazhai peytum puumi ndanaiyavillai

rain rain_PAST_CON earth wet_INF_not

'even though it rained, the earth is not drenched'

8. Complement Clause

avan veelai muTindtuviTTatu enRaan

he work finish_PAST_PAR_leave_PAST_it say_PAST_he
'he said that the work is finished'

Tense, mood and aspect are conveyed by auxiliary verbs and the inflections on verbs. Though they can be compartmentalized theoretically, they depend on one another and so need to be dealt in a single package.

4.2.2.2. Typology of verbs

At least two types of verbs can be identified in Tamil: lexical verbs and auxiliary verbs. The lexical verbs, as we noted already, carries the primary meaning of the predicate. The auxiliary verbs carry the secondary meaning such as tense, aspect, mood, voice and attitude. The auxiliary verbs can be classified as follows (Lehmann, 1993:205):

Category	**Auxiliary verbs**
Aspect	*aaku, aayiRRu, iru, viTu,*
Mood	*-aam, aakaatu, iru, kuuTu, aTTum, paar, poo, vaa, maaTTu, muTi, veeNTu*
Passive voice	*paTu*
Causation	*vai, cey, paNNu*
Negative polarity	*illai*
Attitude	*kiTa, kizhi, taLLu, tiir, tolai, poo, pooTu*
Non-attitude	*azhu, koTu, koL, paar, vai*

4.2.2.3. Compounding of verbs

Building of verbal forms for denoting tense, mood and aspect is referred here as compound verbs. Compounding leads to tense-aspect-mood (TAM) system, which is crucial to verbs. The auxiliary verbs added to non-finite and gerundial forms of the main verb (MV). The verb flow chart (see next page) depicts the complex process of verbal compounding.

4.2.2.3.1. Building of tensed forms

The morphological generation of finite and non-finite forms of verbs has been discussed under the word building mechanism or morphology.

4.2.2.3.2. Building of aspectual forms

Aspectual auxiliaries express aspect in Tamil. The aspectual auxiliaries not only express aspectual distinction but also other semantic concepts depending upon the context. Lehman (1989) identifies the following five aspects inTamil.

1. Inceptive aspect
2. Progressive aspect
3. Durative aspect
4. Iterative aspect
5. Perfective aspect

Type	**Structure**	**Example**
Inceptive aspect: The verb *aaku* occurs as an auxiliary verb in Tamil finite past tense form after *al* suffixed deverbal nouns expressing inceptive aspect.	V-*al* +*aaku* + PNG	*avaL avanaik kaNTatum paaTalaanaaL*'She started singing immediately after seeing him'
Perfective aspect : The perfective aspect in Tamil is expressed by the auxiliary verbs iru, *aayiRRu* and *viTu* which are added to the past participle form of a main verb.	MV in past participle form + *iru* + PNG MV in past participle form + *aayiRRu*	*uSaa cennaikkup pooy irukkiRaaL* *'Usha has gone to Chennai'* *uSaa camaiyal ceytaayiRRu* 'Usha has finished cooking'
The auxiliary *viTu* added after past participle form expresses perfect aspect, that is an action or event	MVin past participle form + *viTu* + PNG	*uSaa anta ndaavalaip paTittu viTTaaL* 'Usha has read the novel' *umaa tanjcaa uurai viTTu*

Type	Structure	Example
that has been completed within a point or period of time. Thus *viTu* indicates a complete action		*pooy viTTaaL* 'Uma has left Thanjavur'
Progressive aspect: **Progressive aspect in Tamil is expressed by auxiliary *koNTiru*. With stative main verbs *iru* expresses progressive aspect.**	**MV in past participle form + *koNTiru/ iru* + PNG**	*umaa paaTik koNTirukkiRaaL*"Uma is singing' *uSaa ndaaRkaaliyil uTkaarntu irukkiRaaL* 'Usha is sitting on the chair'
Durative aspect: The compound auxiliary verb *koNTuvaa* (a combination of the past participle form, *koNTu*, of the verb *koL* and vaa 'come') following a main verb in verbal participle expresses durative aspect. In durative aspects an on going action or event is related to a period of time.	MV in past participle form + *koNTuvaa* + PNG	*avaL peeca peeca avan mozhipeyarttukkoNTu vandtaan* 'He went on translating as she was speaking'
Iterative aspect: The same compound verb *koNTuvaa* with following a main verb in verbal participle form, denotes iterative aspect too. Iterative aspect is the	MV in past participle form + *koNTuvaa* + PNG	*kazhindta oru vaaramaaka kaalaiyil mazhai peytu koNTu varukiRatu* 'For the last one week it rains in the mornings'

Type	Structure	Example
repeated or regular occurrence of an action or event during a period of time. In this case the part of the compound auxiliary verb *koNTu* can be dropped.		

4.2.2.3.3. Building of modal forms

The auxiliaries such as *aam, aakaatu, iru, kuuTu, TTum, paar, poo, vaa, maaTTu, muTi,* and *veeNTu* express mood in Tamil.

Function	Pattern	Example
Internal obligation	MV in past participle form + *veeNTum*	*uSaa inRu maalai madurai pooka veeNTum* 'Usha must go to Madurai this evening'
Negation of external obligation	MV in past participle form + *veeNTaam*	ndii inRu paLLikku kaNTippaaka pooka veeNTaam 'You must not go to school today'
Desideration	MV in past participle form + *veeNTum*	*umaa ooyvu eTukka veeNTum* 'Uma should take rest' *ndiingkaL kuzhandtaiyaikkuk kaRpikkaveeNTum* 'You should teach the child'
External obligation imposed by outer circumstances or authority.	1.MV in infinitive form + *veeNTiyiru* + Tense + Neuter 2. MVin infinitive form + *veeNTivaa*+ Tense + Neuter	*umaa inRu maturai pooka veeNTiyirukkum* 'Uma has to go to madurai today' *uSaa ndeeRRu cennai pooka veeNTi vandtatu* 'Usha had to go to Chennai yesterday'

Function	**Pattern**	**Example**
Negative obligation.	1. MV in infinitive form+ *kuuTaatu* *2. al* suffixed verbal nouns.+ *aakaatu*	*ingkee yaarum kuLikkak kuuTaatu*.'No one should take bath here' *ndii ingkee varalaakaatu* 'You should not come here'
Probability	MV in infinitive form + *kuuTum.*	*avan inRu varakkuuTum* 'He may come today'
Ability and possibility	1. MV in infinitive form + *muTiyum/ iyalum* 2. MV in infinitive form + *muTi* + Pres. / Past + *atu*	*umaavaal ndaTakka muTiyum* 'Uma can walk' *uSavaal ndanRaaka malayaaLam peeca iyalum* 'Usha can speak well in Malayalam' *ennaal ndeeRRu paTikka muTindtatu* 'I could study yesterday'
Circumstantial possibility and conjectural possibility.	***V-al* + aam**	*paTaiviiran kutiraiyil eeRalaam* 'The soldier may claim upon the horse' (Circumstantial possibility) *Umaa ipootu caappiTalaam* 'Uma may eat now' (conjectural possibility)
Positive Ability	**1**.MV in Infinitive form + *muTi* + Tense + Neuter 2.MV in infinitive form + *iyalum*	*enaal ndeeRRu ndanRaaka tuungka muTindtatu* 'I was able to sleep well yesterday' *ennaal cariyaaka aangkilam peeca iyalum* 'I can speak in English clearly'

Function	**Pattern**	**Example**
Negative ability	*MV in Infinitive form* + muTiyaatu / iyalaatu (negative)	*ennaal aangkilam peeca muTiyaatu / iyalaatu* 'I cannot speak English'
Permission	*V-al* + aam	*ndii pookalaam* 'You may go'
Hortative or optative and desiderative	*MV in infinitive form* + aTTum	*umaa meeTaiyil paaTaTTum* 'Let Uma sing on the stage' *avarkaL makizhcciyaaka vaazhaTTum* 'May they live happily'
Hortative (if the subject NP of the clause is the first person inclusive pronoun.)	*V*-al + aam	*vaarungkaL (ndaam) caappiTalaam* 'Come, let's eat'
Intention and prediction (Speaker's prediction or subject's intention of the performance of the action denoted by the verb.)	1.MV in infinitive form + *poo* + Tense + PNG 2.MV in infinitive form + *vaa* + Tense + PNG *3.MV in infinitive form + iru*	*umaa oru viiTu kaTTap pookiRaaL* 'Uma is going to build a house' *mazhai peyyap pookiRatu* 'It is going to rain' *ndaan ammaaviTam uNmaiyaic colla vandteen* 'I was going to tell mother the truth' *uSaa ndaaLai cennai cella irukkiRaaL* 'Usha indents/plans to go to Chennai tomorrow'
Intentional attempt	*MV in infinitive form* + paar	*uSaa pattu maNikkuL camaiyalai muTikkap paarttaaL* 'Usha tried to finish cooking before 10 O' clock' (but did not complete it)'
Positive permission *and* suggestion	*V-al* + aam	*ndii viiTTukku pookalaam* 'You can go home'

Function	Pattern	Example
Negative permission	*V-al* + aakaatu	*kaiy kazhuvaatu caappiTal aakaatu* 'One should not eat without washing the hands'
Negative willingness	*Main verb in infinitive form* + maaTTu	*umaa ndaaLaikku cennai pooka maaTTaaL* 'Uma will not go to Chennai tomorrow'

4.2.2.3.4. Building of other forms with auxiliary verbs

Function	Structure	Example
Passive	MV in infinitive form + *paTu* + Tense + PNG	*vaali iraamanaal vatam ceyyappaTTaan* 'Vali was killed by Raman'
Causative	MV in infinitive form + cey/vai/paNNu + Tense + PNG	*aruL umaavai veelai ceyya vaittaan* 'Arul made Uma do the work' *celvam kalaavai paaTac ceytaan* 'Selvam made Kala sing'

4.2.2.3.5. Summing up of verbal compounding

The fallowing table depicts the entire TAM system of Tamil. (The table is prepared by taking into account the descriptions given in (Annamalai (1982), Asher (1982), Stever (1983) and Lehman (1989) giving credence to my own innovation.).

Meaning (arranged keeping in view of the source language)	Form in Tamil
Past tense	*V + past tense + PNG* ex. *avan kaTitam ezhutinaan* 'He wrote a letter'
Present Tense	*V + present tense + PNG*

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
	ex. *avan kaTitam ezhutukiraan* 'He writes a letter'
Future Tense	V + future + PNG ex. *avan kaTitam ezhutuvaan* 'He will write a letter'
Future time with modal auxiliaries. In many contexts, modal auxiliaries have inherent future reference, both in their present tense and past form.	V-*al* + *aam* *avan ndaalai pookalaam* 'He may go tomorrow'
Present perfect aspect	V + past participle + *iru* + present + PNG ex. *kaNNan kaTitam ezhutiyirukkiRaan* 'Kanna has written a letter'.
Past perfect aspect	1. V + past participle + iru + past + PNG ex. *kaNNan kaTitam ezhutiyirundtaan* 'Kannan had written a letter' 2.V + past participle + *aayiRRu* *umaa camayal ceytaayiRRu* 'Uma completed cooking'
Present progressive	V + past participle + *koNTiru* + present + PNG ex. *kaNNan kaTitam ezhutik koNTirukkiRaan* 'Kannan is writing a letter'
Past progressive aspect	V + past participle + *koNTuiru* + past + PNG ex. *avan ezhutikkoNTirundtaan* 'He was writing'
Future progressive aspect	V + past participle + *koNTiru* + future + PNG ex. *avan ezhutikkoNTiruppaan* 'He will be writing a letter'
Inceptive aspect	V-al + *aaku* + Tense + PNG

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
verbal noun + aaku is equal to *toTangku* 'start' which is added to the infinitive form of a main verb.	ex. *umaa paaTalaanaaL* 'Uma started singing' *umaa paaTat toTangkinaaL* 'Uma started singing'
Durative	V + past participle + vaa + Tense + PNG ex. *umaa peeca kaNNan mozhipeyarttu vandtaan* 'Kannan kept on translating while Uma was talking'
Iterative	V + past participle + *vaa* + Tense + PNG ex. *kazhindta oru vaaramaaka aruL kaalaiyil ezhundtu paTittu varukiRaan* 'For the last one week Arul is studying (regularly) by getting up early in the morning'
Ability	1.V + infinitive + *muTiyum / iyalum* (positive) ex. *avanaal aangkilam peeca muTiyum/iyalum* 'He can speak English'
Negation of ability	2.V + infinitive + *muTiyaatu / iyalaatu* *kaNNanaak indta muuTTaiyai tuukka muTiyaatu/iyalaatu* 'Kannan cannot lift this package' 3.V + infinitive + *muTiyavillai* ex. *enaal caturangkam aaTa muTiyavillai* 'I could not play chess'
Possibility: circumstantial possibility	1. V-*al* + *aam* ex. *avarkaL koopurattil eeRalaam* 'They can climb up the tower' 2.V + infinitive + *kuuTum*

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
	ex. *indta kuLattil ndiiccal aTikkak kuuTum* 'One can swim in the pond' 3.V + infinitive + *muTiyum* *indta caalaiyil vaakanangkaL cella muTiyum*'The vehicles can ply in this road'
Possibility: conjectural possibility	*avaL ippozhutu viiTTukkup pookalaam* 'She may go home now'
Permission	1. V-al + aam *ndaan pukai piTikkalaamaa*? 'May I smoke?'
Negation of permission	1. V-al + *aakaatu* *indta aRaiyil pukai piTkkalaakaatu* 'One must not smoke in this room' 2. V-al + *kuuTaatu* *indta kuLattil ndiical aTikkak kuuTaatu* 'One should not swim in this pond'
Willingness	V + future tense + PNG *epootu muTikiRatoo apootu ndaan kaTitam ezhutuveen* 'I will write a letter when it is possible to write one' V + present tense + PNG-aa *innoru kooppai teeniir kuTikkiRaayaa?* 'Will you take another cup of tea?'
Willingness on the part of the speaker in 2nd person and 3rd person ('weak volition') Restricted use.	V-*al* + *aam* *avan paNam peRalaam* 'He can get money' *ndii virumpuvatu pool ceyyalaam* 'He can do as he wish'
Willingness ('weak volition')	V + future tense + PNG + *aa* *ndii ennai mannippaayaa?* Will you excuse me?'

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
Negative willingness	V + infinitive + maaTTu + PNG *kaNNan inRu veelai ceyya maaTTaan* 'Kannan won't do work'
Refusal	V + infinitive + maaTTu + PNG *ndaan kaNNanuTan peeca maaTTeen* 'I will not talk to Kannan'
Intention on the part of the speaker only in 1st person ('intermediate volition').	1. V + future tense + PNG ex. *ndaangkaL ungkaLiTam engkaL tiirmaanattait terivippoom*. 'We will inform you our decision' 2. *aakaatu* ex. *enakku mandtiriyai paarttu peeca ndiiNTa ndeeram aakaatu.*It will not take long time for me to meet minister.
Insistence ('strong volition'). Restricted use. Legal and quasi-legal.	V-al + *aam* *ndaan colkiRa paTi ndii ceyyalaam* 'You shall do as I say' *avan taNTikkappaTalaam* 'He shall be punished' viyaapaari tannuTaiya karuviyai ceppam ceytu vaittirukkalaam 'The business man shall maintain the equipment in good repair'
Insistence ('strong volition').	1.V + future tense + PNG ndiingkaL colvatai avan ceyvaan 'He will do what you say' V + past participle form + *iru* + infinitive + *veeNTum* ex. *atu un tavaRu. ndii kuzhandtaiyai unnuTan eTuttuc cenRirukka veeNTum* 'That is your mistake. You should have the child along with you'

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
Obligation: internal obligation	V + *infinitive* + veeNTum ex. *avanukku avacaramaaka viiTTukkup pooka veeNTum* 'He has to go home immediately'
Obligation: external obligation	1.V + infinitive + *veeNTivarum* / *veeNTiyatu varum* ex. *avanukku ndaaLai madtiriyai candtikka veeNTi varum* 'He has to meet the minister tomorrow' 2.V + infinitive + *veeNTi* / *veeNTi* irukkiRatu ex. avanukku ndaaLai mandtiriyaic candtikka veeNTi /veeNTiyatu irukkiRatu 'He has to meet the minister tomorrow'
Obligation: negation of external obligation	*ndii ndaaLai mutal kalluurikkup pooka veeNTaam* 'You don't need to go to college tomorrow onwards'
Obligation: negative obligation	1. V + infinitive + *kuuTaatu* *ndiingkaL caalaiyin mattiyil ndaTakkakkuuTaatu* 'You must not walk on the centre of the road' 2.V-al + aakaatu *matu arundtutal aakaatu* 'One should not drink liquor'
Prediction: specific prediction	V + future + PNG ex. *viLaiyaaTTu indndeeram muTindtirukkum* 'The game will be finished by now' V + infinitive + *veeNTum* ex. *viLaiyaaTTu indndeeram muTindtirukka veeNTum* 'The game should be finished by

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
	now'
Prediction: timeless prediction	V+future+PNG ex. *eNNai taNNiiril mitakkum* 'The oil will float in water'
Prediction: habitual prediction	V + future +PNG *avanukkuc candtarppam koTuttaal avan (eppozhutum) maNikkaNakkaakap peecuvaan* 'He always talks for hours if you give him the chance'
Logical necessity	1. V + infinitive + veeNTum ex. *tavaRu irundtirukka veeNTum* 'There has been a mistake' 2. *muTiyaatu* ex. *tavaRu irundtirukka muTiyaatu* 'There cannot be a mistake' 3. V + infinitive + *veeNTaam* ex. *avanuTaiya parimaaRRattiRku veeRu kaaraNam irundirukka veeNTaam* 'There mustn't be another reason for his behaviour'
Obligation and logical necessity	V + infinitive + veeNTum *ndii uTanee puRappaTa veeNTum* 'You ought to start at once' *avarkaL ipootu ingkee irukka veeNTum* 'They ought to be here by now'
Desideration: duty, advise, suggestion	V+infinitive + *veeNTum* *ndii inRu viiTTuppaaTam ezhutaveeNTum* 'You should write your home work today' *umaa ndnRaakp paTikka veeNTum* 'Uma should study well' V+infinitive + *aTTum* *avan tinamum atikaalaiyil ezhundtu paTikkaTTum* 'Let him study by waking up

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
	early in the morning'
Negative desideration	1.V+infinitive + kuuTaatu *ndii iravil atika ndeeram kaN vizhittup paTikkak kuuTaatu* 'You should not study your lessons by keeping awake late in the night' 2.V-*al* + *aakaatu* i*ravil veku ndeeram kaN vizhittal aakaatu* 'One should not remain awake late in the night'
Intention	V+infinitive + *poo* + tense + PNG ex. *kaNNan umaavai maNakkap pookiRaan* 'Kannan is going to marry Uma'
Intention (with restricted set of verbs)	V + infinitive + *vaa* + tense + PNG ex. *kaNNan umaavai keeTka varukiRaan* 'Kannan is going to ask Uma'
Passive	V + infinitive + *paTu* + tense + PNG *avan kaNNanaal kollappaTTaan* 'He was killed by Kannan'
Causation	V + infinitive + *vai* + tense + PNG *avan kaNNanai tuungka vaittaan* 'He made Kannan sleep' V+ infinitive + *cey* *avan kaNNanai tuungka ceytaan* 'He made Kannan sleep'
Negation	V + infinitive + *illai* *avan viiTTiRku pookavillai* 'He did not go home'
Negation in future	V + infinitive + *maaTTu* + PNG *kaNNan ndaaLai vara maaTTaan* 'Kannan will not come tomorrow'

Meaning (arranged keeping in view of the source language)	**Form in Tamil**
Volition, willingness, reflexive	V + past participle + koL + tense + PNG *katavu taanee tiRandtu koNTatu* 'The door opened on its own' *kaNNan tan kuzhadntaiyai tan maTiyil vaittukkoNTaan* 'Kannan kept his child on his lap' *kaNNan tannait taanee meccikkoNTaan* 'Kannan praised himself'
Assessment	V + past participle + *paar* + tense + PNG *avaL ceelaiyai uTuttup paarttaaL* 'She wore the saree (in order to see whether it suit her or not)'
Anticipated consequence	V + past participle + *vai* + tense + PNG *avaL (kaaRRukkaaka) katavai tiRandtu vaittaaL* 'She kept the window open (so that the wind could blow inside)'
Benefaction	V + past participle + *koTu* + tense + PNG *avaL kaNNanukku veelai ceytu koTuttaaL* 'She worked for the benefit of Kannan'

4.2.2.4. Patterns of verb phrases

The following table shows the different types of VP patterns/predicate patterns (and sentential patterns) based on the characteristic features of verbs.

Type	**Pattern**	**Example**
Pattern 1	NP + NP	*atu puttakam* 'that is a book' *avan maaNavan* 'He is a student'
"	NP-*ukku* + NP	*avan-ukku talaivali* 'He has head ache'
"	NP + relative clause + NP	*itu vaaTakaikku viTum vaNTi*

Type	Pattern	Example
		'This is a car to let'
“	NP + pronominalized clause	*avan indta kalluuriyil paTittavan* 'He is one who got educated in this college'
“	*atu*-clause + NP	*tinamum uTaRpayiRci ceyvatu avaciyam* 'It is important to do exercise daily'
“	*atu*-clause + NP-*ukku* + NP	*avan viiTTukku varuvatu enakku makizhcci* 'I am happy that he is coming home'
“	*atu*-clause-*il* + NP-*ukku* + NP	*avan teervil veRRipeRRatil enakku makizhcci* "I am happy that he has passed in the examination'
“	V-*atu* clause	*yaarai ndoovatu 'Whom to blame'*
Pattern 2	NP + BV (*iru*, *uNTu*, *illai*)	*kaTavuL irukkiRaar* 'God exists'
“	NP + NP-*aaka* + BV	*avan paci-aaka irukkiRaan* 'He is hungry'
“	NP-*ukku* + NP-*aaka* + BV	*avanukku paciyaaka irukkiRatu* 'He is hungry'
“	NP-*iTam* + NP + BV (*iru*, *illai*)	*enn-iTam paNam irukkiRatu* 'I have money'
“	NP-*il* + NP + BV (*iru*, *illai*)	*kuLatt-il taamaraip puu illai* 'There is no lotus in the pond'
“	NP + Adv [Adv A] + BV (*iru*, *illai*)	*anta puttakam ingkee illai* 'That book is not here'
“	NP + NP-*il* [Adv A] + BV (*iru*, *illai*)	*andta puttakam kaTaiyil illai* 'That book is not in the shop'
“	NP + PP [Adv A] + BV (*iru*, *illai*)	*puttakam meejai meel irukkiRatu* 'The book is on the table'
“	NP-*ukku* + *atu*-clause + NP-*aaka* + BV (*iru*, *illai*)	*enakku unnuTan iruppatu makizhcciyaaka irukkiRatu* 'I am

Type	Pattern	Example
		happy to be with you'
“	*aal*-clause + NP-*aaka* + BV (*iru*, *illai*)	*avarkaL kalyaaNam ndaTandtaal nanRaaka irukkum* 'It will be good if their marriage takes place'
“	NP + *atu*-clause-*pool* + BV	*e1laam ndii viTTuccenRatu pool appaTiyee kiTakkiRatu* 'All lise as you left'
“	*ataRku* clause-a set of locative postpositions denoting different dimensions of temporal relations + NP + Adv A + BV (*iru*, *illai*)	*avan varuvataRRku munnal ndaan ingku irundteen* ' I was here before he came'
Pattern 3	NP + NP + BV (*aaku*, *alla*)	*avan maaNavan aavaan* 'He is a student'
Pattern 4	NP-*ukku* + Vi (a set of verbs of feeling)	*enakku pacikkiRatu* 'I feel hungry' *enakku talaivalikkiRatu* 'I feel headache'
Pattern 5	NP + Vi	*ndaam vaazhkiRoom* 'We live'
“	NP + NP-*ukku* + Vi	*avan viTTukkup poonaan* 'He went home'
“	NP + NP-*il* + Vi	*avan viTutiyil tangkinaan* 'He stayed in a lodge'
“	NP + PP + Vi	*eli vaLaikkuL nduzhaindtatu* 'The rat went inside the hole'
“	NP + Adv A + Vi	*avan pattumail ndaTandtaan* 'He walked for ten miles'
“	NP + NP-*aaka* + Vi	*ilaikaL manjaL niRamaaka maaRiyatu* 'The leaves turned yellow' *avan oru paNakkaaranaaka iRandtaan* 'He

Type	**Pattern**	**Example**
		died a rich man'
“	NP + *enRu*-clause + *teri*	*avan varuvaan enRu terikiRatu* 'It seems that he will come'
“	*atu*-clause-*pool* + *teri*	*mazhai varuvatu pool terikiRatu* 'It appears as if it is going to rain'
“	*atu*-clause-*aaka* + *teri*	*avan avaLaip paarttu makizhcciyaTaindtataakat terikiRatu* 'It appears that he felt happy by seeing her'
“	NP + Infinitive clause + Vi	*avan engkaLai candtikka vandtaan* 'He came to meet us'
“	NP + Past participle clause + Vi	*avaL tan kuzhndtaiyaip paarttu makizhciyaTaindtaaL* 'She felt happy by seeing her child'
“	NP + *atu*-clause-*ukku* + Vi	*avar atai avaniTam colvataRku veTkappaTTaar* ' He felt shy to tell that to him'
“	NP + *atu*-clause-*ukku*-*aaka* Vi	*avaL avan varuvataRkaaka kaattirundtaaL* 'She waited for him to come'
Pattern 6: The basic case-marking pattern of a Tamil transitive clause is the ‘nominative-accusative’ pattern. All transitive verbs show this pattern.	NP + NP-*ai* + Vt	*avarkaL avanaip paarttaarkaL* 'They saw him'

Type	Pattern	Example
‘‘	NP + NP-*ai* + NP-*il* + Vt	*avar paNattaip peTTiyil vaittar* 'He kept the money in a box'
‘‘	NP + NP-*ai* + NP-*poola* + Vt	*avar avanai oru eezhaiyaip poola ndaTattinaar* 'He treated him as a poor fellow'
‘‘	NP + NP-*ai* + NP-*aaka* + Vt	*avaL paalaic cuuTaak kuTittaaL* 'She drank the milk hot' *avarkaL avanai aracanaaka ndaTattinar* 'They treated him a king'
‘‘	NP + NP-*aaka* + NP-*ai* + Vt	*avaL avan veRRikkaaka avanaip paaraaTTinaaL* 'She praised him for his success'
‘‘	NP + Infinitive clause + Vt	*avan avaLaip paarkka virumpinaan* 'He wanted to see her'
‘‘	NP + Infinitive clause + Vt	*avan taan amerikkaa poovatai yaarum aRiya viruumpavillai* 'He did not want anybody to know that he is going to America'
‘‘	NP + infinitive-clause + NP-*ai* + Vt	*avan ennaip paarkka tan tampiyai azhaittaan* 'He called his brother to see me'
‘‘	NP + Verbal participle clause + NP-*ai* + Vt	*avar maRaindtu ndinRu avaLaip paarttaar* 'He saw her hiding

Type	Pattern	Example
		himself'
“	NP + V-*aamal* clause (i.e. negative verbal participle clause) + NP-*ai* + Vt	*avar avaLaip paarkkaviTaamal ennait taTuttaar* 'He obstructed me not to see her'
“	NP + *aal*-clause + Vt	*avan paNam kiTaittaal celavazhippaan* 'If he gets money he will spend it'
“	NP+ *atu*-clause-ai + Vt	*avar avaL kuuRuvataik keeTTaar* 'He listened to what she said' ndaan kaLLan ooTuvataip paartteen 'I saw the thief running'
“	NP + *atu*-clause-*ukku* + Vt	*avar avaLaip paarppataRku virumpavillai* 'He did not want to see her'
“	NP + *atu*-clause-*ukku-aaka* + Vt	*avar angku tangkuvataRkaaka viiTu kaTTinaar* 'He built a house to stay there'
21	NP + *enRu*-clause + Vt	*ndaan avaL vavruvaaL enRu ndinaitteen* 'I thought that she would come'
22	NP + *enpatu*-clause-*ai* + Vt	*avar angku pooka veeNTum enpatai avaLiTam kuuRavillai* 'He did not tell her that he should go there'
Pattern 7: The first deviation from the basic pattern of transitive verb is ‘Dative-accusative’ pattern. The verbs	NP-*ukku* + NP-*ai* + *teri*	*enakku avaLait teriyum* 'I know her'

Type	Pattern	Example
of mental experience (ex. *teri* 'know', *puri* 'understand', etc.), verbs of emotional experience (ex. piTi 'like', etc.) and verbs of physical and biological experience show this pattern.		
"	*enRu*-clause + NP-*ukku* + *teri*	*peerundtu eppootu varum enRu enakkut teriyaatu* 'I don't know when the bus comes'
"	NP-*ukku* + NP + *veeNTum*	*enakku paNam veeNTum* 'I need money'
Pattern 8: This is the typical pattern of trivalent verbs receiving three arguments, subject, object and indirect object.	NP [S] + NP-*iTam* [IO] + NP(-*ai*) [O] + Vt	*avaL enniTam paNam koTuttaaL* 'She gave me money'
"	NP + *enRu*-clause + NP-*iTam* + Vt	*avaL unpeyar enna enRu enniTam keeTTaaL* 'She asked me what is my name'
"	Interrogative clause + Vt	*un peyar enna kuuRu* 'Tell me what is your name'

Type	Pattern	Example
“	NP + NP-*ukku* + NP + Vt (*koTu* type of verbs)	*avaL avanukku oru utai koTuttaaL 'She gave him a kick'*
“	NP + NP-*ukku* + Verbal participle clause + Vt	*avar avanukku miTTaay vaangkik koTuttaar* 'He bought sweets and gave him'
“	NP + NP-*iTamirundtu* + NP + Vt (*vaangku* type of verbs)	*avaL enniTamirundtu paNam vaangkinaaL* 'She got money from me'
“	NP + NP-*ukkuaaka* + NP [O] + Vt (*vaangku*-type of verbs)	*avar avanukkaaka puttakam vaangkinaar* 'He bought a book for him'

4.2.3. Building of adjectival phrases

The adjectival phrases are headed by an adjective. In Tamil adjectival phrase always precedes head noun in NP. The adjectives in Tamil come to attribute noun. They are traditionally classified as follows:

Traditional classification of adjectives	Examples
Demonstrative	*indta* 'this', *andta* 'that'
Distributive	*ovvoru* 'each'
Interrogative	*endta* 'what, which', *enna* 'what', *evvaLavu* 'how much'
Possessive	*ennuTaiya* 'my', *unnuTaiya* 'your', *avanuTiya* 'his', *avaLuTaiya* 'her', *atanuTaiya* 'its', *ndamuTaiya* 'our', *unnuTaiya* 'your', *avarkaLuTaiya* 'their'
Of quality	*ndalla* 'good', stupid, *puttiyuLLa* 'clever', *viiramuLLa* 'brave'

The arrangement of items coming under adjectival phrase has been discussed under NP. In the present day analysis all except the last one are kept under determiner.

4.2.4. Building of adverbial phrases

Modern Tamil makes use of a number of noun and verb forms categorically reanalysed to a closed set of adverbs in the same way a number of uninflected and inflected noun and verb forms are syntactically reanalysed to a close set of postposition.

4.2.4.1. Constituents of adverbial phrases

The following table shows the different types of adverbs in Tamil with examples.

Broad categories	***Sub types of adverbs***	***Examples***
Simple adverbs	*1. Manner*	metuvaaka *'slowly'*, viraivaaka *'quickly'*, tairiyamaaka *'boldly'*, 'ndanRaaka *'well'*, kaTinamaaka *'hard'*
“	*2. Place*	ingkee *'here'* , angkee *'there'*, arukee *'near'*, *meelee 'up'*
“	*3. Time*	inRu *'today'*, ituvarai *'still'*, ciikkiram *'soon'* , ipootu *'now'*
“	*4. Frequency*	eppozhutum *'always'*, orupootum *'never'*, aTikkaTi *'often'*, orutaTavai *'once'*, *epootaavatu 'occasionally'*
“	*5. Sentence*	ndiccayamaaka *'certainly'*, kaTTaayamaaka *'definitely', surely*
Interrogative adverbs that are used to frame questions	*6. Interrogative*	eppootu *'when'*, engkee *'where'*, een *'why'*, eppaTi *'how'*
Relative adverbs that are used to combine clauses	*7. Relative*	eppootu *'when'*, engkee *'where'*, een *'why'*

The adverbial phrase generally comes immediately before the head verb. The adverbial phrase has an adverb as a head, which can come alone or proceeded by a sequence of words.

ex.

avaL mella ndaTandtaaL

she slowly walk_PAST_she

'she walked slowly'

avaL mika viraivaay ndaTandtaaL

she very fast walk_PAST_she

'she walked fast'

In the first sentence *mella* is a simple phrase, which comes alone to attribute the head verb. In the second sentence *mika viraivaay* is a complex phrase containing an adverb preceded by an intensifier (adjective).

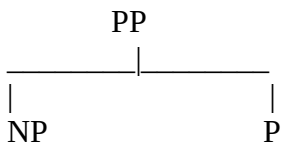
Based on the formation and the structure, adverbs can be classified as follows:

Types of adverbs	**Items**	**Example**
Simple adverbs	*mella* 'slowly'	*avan mella caappiTTaan* 'He ate slowly'
Verbal participial form	*viraindtu* 'fast'	*avan viraindtu vandtaan* 'He came fast
Infinitive form	*urakka* 'loudly'	*avan urakka peecinaan* 'He talked loudly'
Noun + *il* form	*viraivil* 'soon'	*avan viraivil ingku varuvaan* 'He will come here soon'
Nouns denoting location/Time + *tooRum*	*ndaaL tooRum*	*avaL ndaaL tooRum koovilukku varuvaaL* 'She comes to temple daily'
Noun + Dative case + Noun	*ndaaLukku ndaaL* 'day by day'	*avaL ndaaLukku ndaaL melindtaaL* 'She became lean day by day'
Reduplicated infinitive	*cuTa cuTa* 'very hot'	*toocai cuTa cuTa*

form		*irundtatu* ‘the dosa was hot’
Reduplicated adverbial form	*mella mella* ‘very slowly’	*avaL mella mella ndaTandtaaL* ‘she walked very slowly’
N + *aaka*	*veekam-aaka* 'fast'	*kaNNan veekamaaka ooTinaan* ‘Kannan ran fast’

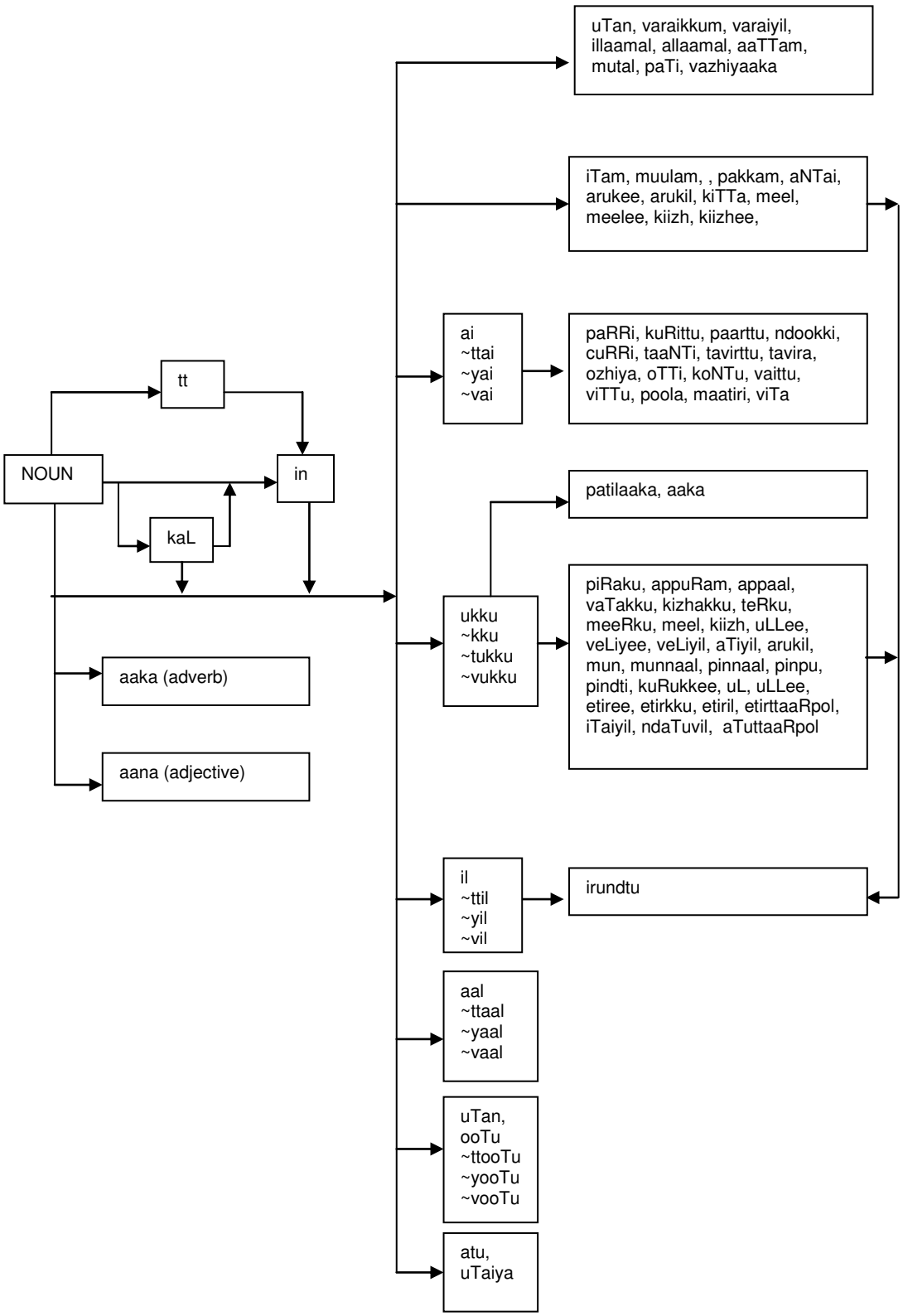
4.2.5. Building of postpositional phrases

Asher (1985) defines postposition in Tamil as 'an element that can be added to a nominal to form a postpositional phrase standing in a functional relationship with a verb'. They can be seen as a somewhat heterogeneous class with members ranging from fully bound to free forms. All postpositions in Tamil are formally uninflected or inflected noun forms or non-finite verb forms. To express, for example, locative functions, Tamil uses nouns denoting various locations as locative postpositions. When a closed set of noun and verb forms occur as postpositions, they follow a noun phrase and form with the preceding noun phrase a postpositional phrase:



The noun flow chart shows the building of postpositional phrases.

NOUN FLOW CHART


NOUN
tt
in
kaL
aaka (adverb)
aana (adjective)
uTan, varaikkum, varaiyil, illaamal, allaamal, aaTTam, mutal, paTi, vazhiyaaka
iTam, muulam, , pakkam, aNTai, arukee, arukil, kiTTa, meel, meelee, kiizh, kiizhee,
ai ~ttai ~yai ~vai
paRRi, kuRittu, paarttu, ndookki, cuRRi, taaNTi, tavirttu, tavira, ozhiya, oTTi, koNTu, vaittu, viTTu, poola, maatiri, viTa
patilaaka, aaka
ukku ~kku ~tukku ~vukku
piRaku, appuRam, appaal, vaTakku, kizhakku, teRku, meeRku, meel, kiizh, uLLee, veLiyee, veLiyil, aTiyil, arukil, mun, munnaal, pinnaal, pinpu, pindti, kuRukkee, uL, uLLee, etiree, etirkku, etiril, etirttaaRpol, iTaiyil, ndaTuvil, aTuttaaRpol
il ~ttil ~yil ~vil
irundtu
aal ~ttaal ~yaal ~vaal
uTan, ooTu ~ttooTu ~yooTu ~vooTu
atu, uTaiya

4.2.5.1. Typology of postpositions

Depending on the case form of the preceding noun phrase, the postpositions can be classified as tabulated below:

Case of the noun phrase preceding the postposition	**Postpositions which follow the noun phrase concerned**
Nominative case	*allaamal* ‘except’, *aaka* 'like', *illaamal* ‘without’, *enRu* 'as such', *ennum* 'as such', *enRa* 'as said', *maatiri* 'like', *muulam* ‘with’, *varai/varaikkum/varaiyil* ‘until’, *vazhiyaaka* 'through'
Oblique form	*pakkam/aNTai/arukil/kiTTee* ‘near’, *kiizh* ‘under’, *aaTTam* ‘like’, *mutal* ‘from’, *paTi* ‘according to’
Dative case	*aTiyil* 'under', *aTuttu* 'next', *aTuttaaRpoola* ‘next’, *aNTai* 'near', *appaal* ‘beyond’, *appuRam* ‘after; behind’, *arukee*/*arukil* 'near', *aaka* 'for', *iTaiyil* 'between', *uL* 'inside', *uriya* 'belong to', *etiree/etirkku/etiril* ‘opposite’, *etirttaaRpoola* ‘opposite’, *kiTTee* 'near', kiiz ‘below’, *kuRukkee* ‘across’, *ndaTuvil* ‘in the middle of’, ndeeril 'in front', ndeeraaka 'straight', pakkattil 'near', *patilaaka* ‘instead of’, *piRaku* ‘after’, *pin/pinnaal/pinpu/pindti* ‘behind; after’, *mattiyil* 'at the centre of', *mun/munnaal/munpu/mundti* ‘before; in front of’, *me<u>e</u>l* ‘above; after’, *meeRku* ‘west’, *teRku* ‘south’, *vaTakku* ‘north’, *veLiyee* ‘outside’,
Accusative case	*oTTi* ‘in connection with’, *ozhiya* ‘except’, *kaaTTilum* 'than', *koNTu* ‘with’, *kuRittu* ‘about’, *cuRRi* ‘around’, *taaNTi* ‘across’, *tavirttu/tavira* ‘except’, *ndookki* ‘towards’, *paRRi* ‘about’, *paarttu* ‘towards’, *poola* ‘like’, *maatiri* ‘like’, *viTa* ‘than’, *viTTu* ‘from’, *vaittu* 'with'
Locative *il*, etc.	*irundtu* 'from', vaittu 'at'

Some of the above listed postpositions denoting spatial and temporal relations can be considered as adverbials. They could take more than one categorical host as anchor and can be inflected further for directional and locational case markers. There is even an overlap of word forms that are postpositions and adverbs. Though these 'adverbial

postpositions' need to be distinguished from the 'regular postpositions' for the sake of computation such difference is ignored. For the purpose of contrast the case inflections also dealt along with postpositions.

4.2.5.1.1. Nominative case + postpositions

The following table shows different postpositions occurring after nominative case with certain descriptive details along with examples.

Postposition	*Descriptive Details*	**Casal relations/ meaning**	**Example**
muulam	The postposition muulam can be translated as 'by means of, through (the agency of), under the auspices of'. *muulam* also expresses instrumental case relation noun by denoting the meaning 'with'.	through-relation and instrumental relation	*pativaaLar muulam* 'Under the auspices of the registrar' *kaNNan caavi muulam katavai tiRandtaan*.'Kannan opened the door with a key'
varai, varaikkum, varayil	As postpositions *varai, varaikkum* and *varayil* express anterior location of limit 'up to' and duration 'up to, until.	`up to' relation	*kaNNan viiTu variai/varaikkum /varaiyil / ooTT-in-aan* 'Kannan drove up to the house' *campaLam vaangkukiRa varaikkum* 'Until (one) draws (one's) pay'
illammal	*illaamal* as a postposition it expresses negative instrumental and negative commitative relation.	Negative instrumental and negative commitative	*kaNNan katavai caavi illammal tiRantaan*. 'Kannan opened the door without a key.'
ceerndtu	*ceerndtu* as a postposition	commitative	*avarkaL iraNTu peerum*

Postposition	*Descriptive Details*	**Casal relations/ meaning**	**Example**
	expresses commitative relation. *ceerndtu* is added to the noun phrase cliticized by *um*.		*ceerndtu vandtaarkaL*'The two of them came together (i.e They arrived simultaneously)'
allammal	*allaamal* as a postposition expresses negative commitative relation.	Negative commitative	*ciitai allamal elloorum vantaarkal.*'Everybody except Sita came.'

4.2.5.1.2. Oblique form + postpositions

The postpositions which are added after oblique form of a noun and their case relations along with meaning are tabulated and summarized as under'

Post position/case suffix	**Descriptive details**	**Casal relation or meaning**	**Examples**
-ai	The accusative suffix is *-ai* and is obligatory with human nouns. Accusative marker is optionally used with neuter nouns. When the object noun is modified by some determiners *ai* is obligatorily used even with neuter nouns.	Objective	*aNNan-ai* 'elder brother.' *enn-ai* 'me.' *ndaan paTam paartteen* 'I saw a picture' *ndaan ndeeRRu paartta paTattai inRu paartteen* 'I saw the picture which saw yesterday' *andta paTattai avaL paarkkavillai* 'She did not see that picture'
-aal koNTu payanpaTutti vaittu	The instrumental case suffix is *aal.* It denotes the tool used by the agent in performing the action identified by the	instrumental relation	*kaNNan kattiyaal pazhattai ndaRukkinaan.* 'Kannan cut the fruit using knife.'

Post position/case suffix	**Descriptive details**	**Casal relation or meaning**	**Examples**
	verb. It is largely the noun denoting the tool such as *katti* 'knife', *peenaa* 'pen' , *taTi* 'stick' etc.alone occur in tool instrumental relation. The tool instrumental case suffix *aal* can be substituted by the postposition *koNTu* and verb particle form *payanpaTutti*		*kaNNan kattiyai koNTu/payanpaTutti pazhattai ndaRukkinaan.* 'Kannan cut the fruit using knife.'
-ukku	*ukku* is the dative case form in Tamil.	The dative case expresses experiences, benefactive, possessive, genitive, allative, time, comparative and purposive relations.	*avan aaciriyarukku paricu koTuttaan* 'He gave a presentation to the teacher.' *avan avaLukku evvaLavoo ndallavan* 'Comparing with her, he is for better.' *avan cennaikkuc celkiRaan*. 'He goes to Chennai.'
-atu *uTaiya*	According to Tolkappiyam *atu* is a genitive marker. Genitive case marker is optional after demonstrative pronoun and sometimes after	Possessive	*en-atu tozhil* 'my duty' *un uur* 'your village' *raaman-atu raaman-in/ raaman/ raamanuTaiya peenaa* 'Raman's pen.'

Post position/case suffix	**Descriptive details**	**Casal relation or meaning**	**Examples**
	human proper nouns. Thus a oblique form stands to denote genitive case. Some times *–in* which is *caariyai* 'inflectional increment' can be considered as oblique case marker may stand to represent genitive case. The post position *uTaiya* too donote genitive case.		
-il	Locative meaning is expressed by the suffix *-il*	`at/in' Locative	*avan cennaiyil paTikkiRaan*.'He studies in Chennai.'
pakkam aNTai aruku kiTTa	*pakkam,* pakkattil, *aNTai, aNTaiyil, arukee, arukil and kiTTa* as postpositions to express proximate location 'near' .	'near' Locative	*andta viTTu pakkam/aNTai/arukee/kiTTa aalamaram irukkiRatu.* There is banyan tree near our house'.
kuuTa *-uTan* *-ooTu*	*kuuTa* as a postposition it expresses commitative case relation. It is synonymous with the case suffixes, *ooTu* and *uTan,* which also denote commitative	Commitative	*en kuuTa vaa* 'come with me'

Post position/case suffix	**Descriptive details**	**Casal relation or meaning**	**Examples**
	case relation. It is to be noted that *kuuTa* also means 'also, too'.		
meel *meelee*	*meel* and *meelee* as a postposition after nouns in oblique form to express superior location 'on' in which case the two entities are in contact	Superior	*ceekar mecaiyin meel(ee) uTkaarndtukkiRaan* 'Sekhar is sitting on the table'
kiizh *kiizhee*	The postposition *kiizh* can be translated as 'under'. The noun *kiiz* 'inferiority', optionally with the euphonic clitic *ee* (i.e. *kiiz* (*ee*) occurs as a postposition after nouns in oblique form to express inferior location 'under'. kiiz can also co-occur with the bound postposition *irundtu*.	Inferior	*marattin-kiizee maNal irukkiRatu* 'There is sand under the tree'
aaTTam	The noun *aaTTam* which means 'motion' occurs as a postposition to express comparison 'like'.	Similarity	*kaNNan panRiyaaTTam kattinaan* 'Kannan cried like a pig'
mutal	*mutal* with temporal nouns as expresses	Source	*kaalai mutal mazhai pey-kiRatu*

Post position/case suffix	**Descriptive details**	**Casal relation or meaning**	**Examples**
	posterior duration 'since, from'. The postposition can also express the starting point of a series when an NP followed by the postposition *varai* 'upto' which expresses the end point of a series, co-occurs in the sentence.		'It has been raining since morning'
paTi	The noun *paTi* 'manner, way' occurs as a postposition expressing the sense 'according to'.	Manner	*raam jaati kaTTu ppaaTu paTi kaliyaanam ceyya villai.* 'Ram didn't marry according to caste rules.
vazhiyaakka	The postposition *vazhiyaaka* can be translated as 'through'. The noun *vazhi* 'path, way' with the so-called adverbalizing suffix *aaka* occurs as postposition expressing motion through an object..	Path	*ciinnu tooTTam vazhiyaaka vantaan* 'Seenu came through the garden.
ooTu, uTan, kuuTa	The sociative suffixes in Tamil are *oTu/ooTu, uTan* and *kuuTa*. Their meaning corresponds to 'with' in English.	Sociative	*un-oTu/ -ooTu/ uTan/ kuuTa* 'with you' *raaman kaNNan-ooTu/uTan/kuuTa vandtaan*. 'Raman came

Post position/case suffix	Descriptive details	Casal relation or meaning	Examples
	Accompaniment is the decisive feature in the meaning of the sociative case.		with Kannan.'
poruTTu	*poruTTu* is synonymous with aaka added to dative NP. It gives benefactive sense.	Benefactive	*avaL avan poruTTu paNam vaangkinaaL* 'She got the money for him'

In the above sentence it gives the concept 'simple location'. Sentence 2 describes the concept of goal. Thus the case suffixes in Tamil are *ai, aal, ooTu, ukku* and *il* denoting accusative, instrumental, sociative, dative and locative respectively. The suffixes *-in, an* and *atu* signify the genitive. The nominative is unmared in Tamil. The accusative and datives can be realized only by case-suffixes. All the rest can be realized either by the case-suffixes or by the postposition. It is large number of case relations are represented by the postpositions. And hence if the case system in Tamil is analysed on the morphological point of view, many cases will go unrepresented.

4.2.5.1.3. Dative case + postpositions

The following table shows different postpositions occurring after dative case with certain descriptive details along with examples.

Postposition	Descriptive detail	Case relations /meaning	Example
piRaku	The noun *piRaku* 'posteriority' occurs as a postposition expressing posterior location in time 'after'.	Posterior location	*kaNNan caapaaTTiRku-p piRaku tuungkukiRaan* 'Kannan is sleeping after lunch'

Postposition	**Descriptive detail**	**Case relations /meaning**	**Example**
appuRam	*appuRam* occurs as a postposition to express posterior location in time and space. *appuRam* can be translated as 'after, behind'.	Posterior location	*kaNNan oru maatattiRku appuRam vandtaan.* *'Kannan came after one month.*
appaal	*appaal* occurs as a postposition which expresses ulterior location 'beyond'. *appaal* can also occur with the bound postposition *irundtu* which has ablative case function.	Ulterior location	*aaRRiRku appaal oru kiraamam irukkiRatu.* 'There is a village beyond the river'
meel *meelee*	The postposition *meel*(*ee*) when occurring after a noun in dative case, expresses superior location, 'above' and non-contact of the two entities involved. When following a time in dative case, *meel*(*ee*) expresses superior location in time 'after'.	Superior location	meecaikku meel(ee) oru viLakkut tonkukiRatu 'A lamp is hanging above the table' *muraLi aindtu maNikku meel(ee) vandtaan*'Murali came after 5 o' clock
kiizh *kiizhee*	The postposition kiizh(*ee*) when occurring after a noun in dative case, expresses inferior location 'below' and non-contact of two entities	Inferior	*meecaikku-k kiizh(ee) oru peTTi irukkiRatu* 'A box is below the table'

Postposition	**Descriptive detail**	**Case relations /meaning**	**Example**
	involved.		
vaTakku teeRku meeRku kizakku	The four directional nouns vaTakku, kizhakku, *teeRku*, and *meeRku* which denote the directions north, east, south, west respectively occur as postpositions to nouns in dative form expressing the four directional location.	Directional location	*uurukku-k kizhakkeekaTal irukkiRatu* 'East of the town is the sea.
uL, uLLee	*uL* (*Lee*) occurs as a postposition express interior location in space 'inside, into' and time 'within, by'. Frequently *uL*(*Lee*) occurs as bound form especially with time nouns.	Interior location	*Raji viiTTukkuuL (Lee) poonaaL* Raji went into the house.' *rameeS indta vaarattiRkuL veelaiyai muTikka veenTum.* 'Ramesh has to finish the work within this week.'
veLiyee	*veLiyee* as a postposition expresses exterior location 'outside'.	Exterior location	*viiTTukku veLiyee oree cattamaaka irukkiRatu* 'There is a lot of noise outside the house'
pin, pinnal pinpu, pindti	*pin, pinnaal, pinpu,* and *pindti* as postposition to express posterior location in time and space 'behind, after'. The ablative case marker *irundtu* can occur with	Posterior location	*raam virundtukup pin/ pinaal/ pinpu/ pindti vandtaan.* 'Ram came after the feast.'

Postposition	**Descriptive detail**	**Case relations /meaning**	**Example**
	pinnaal.		
kuRukee	*kuRukkee* as a postposition to express motion to an ulterior location 'across'.	Transverse location	*oru eli meecaikku kuRukee oTiyatu* A mouse ran across the table.'
iTaiyil	*iTaiyil* and *ndaTuvil* as postpositions express medial location 'between, in the middle of'.	Medial location	*uuruku ndaTuvil oru aaRu irukiRatu* 'There is a river in the middle of the town.
mun, munnaal, munpu, mundti	*mun, munnaal, munpu* and *mundti* as postpositions express anterior location in time and space 'before, in front of'.	Anterior location	*iraNTu maNikku munaal vaa.* 'Come before 2 'o' clock'. *enakku munpu ninRaan.* 'He stood in front of me'
etiree	*etiree, etirkku,* and *etiril* as postpositions express citerior location 'opposite'.	Citerior location	*ı viTTuku etiree orukoovil irukkiRatu* 'Opposite that house is a temple'
etirkku, etitiril, etirttaaR poola	*etirttaaRpoola* occurs as a postposition to express citerior location 'opposite'.	Opposite	*koovilukku ettirtaaRpoola taNNiir toTTi irukiRatu.* Opposite the temple there is a tank.
patilaaka	*patilaaka* occurs as a postposition to express 'instead of'.	Substitution	Cinimaavukku-p patilaaka-k kaTaRkaraikkup poovoom 'We will go to the beach instead of cinema'
aTuttaaR poola	*aTuttaaRpoola* occurs as a postposition to express	Near	*anta viiTTukku aTutaaRpoola oru kaTai*

Postposition	**Descriptive detail**	**Case relations /meaning**	**Example**
	adjacent location 'next'.		*irukkiRatu* ’Next to that house is a shop.
aaka, veeNTi	*aaka* and *veeNTi*	Purpose	*avaLukku aaka/ veeNTi avan puttakam vaangkinaan* 'He bought book for her'

4.2.5.1.4. Accusative case + postpositions

The following table shows different postpositions occurring after accusative case their descriptive details and case relations along with examples.

Post *Position*	*Descriptive details*	**Case relations**	**Examples**
kuRittu paRRi	*paRRi* and *kuRittu* function as postpositions expressing 'about'.	About-relation	*raamu mozhiyiyalai kuRittu/paRRi peecinaan.*'Ramu talked about linguistics'
cuRRi	*cuRRi* and *cuRRilum* occur as postposition expressing circumferential location 'around'.	Around-relation	*viiTTaic cuRRi caakkaTai irukkiRatu 'There is a gutter around the house'*
paarttu ndookki	*paarttu* and *ndookki* occur as postpositions expressing the direction of verbal or mental activity towards something denoted by NP to which they are postposed.	Towards-relation	*raji raajavaip paarttu/ ndookki peecinaan.* 'Raji talked towards Raja'

Post *Position*	*Descriptive details*	**Case relations**	**Examples**
taaNTi	*taaNTi* occurs as a postposition expressing ulterior location 'across'.	Across-relation (ulterior location)	*enkaLviiTu koovilai-t taaNTi irukkiRatu* 'Our house is located across the temple'
tavirttu *tavira* *ozhiya*	*tarvirttu, tavira* and ozhiya as postpositions expressing the meaning 'except, besides'.	Except-relation	*vikaasaittait tavirttu/ tavira/ ozhiya veeRu yaarum varavillai*. 'Except Vikash no one else came'
oTTi	*oTTi* occurs as a postposition expressing the meaning 'in connection with, regarding'.	'In connection with' relation	*rameeS aaraayciyyai oTTi veLindaaTTukuc cenRaan* 'Ramesh went abroad in connection with research'
viTTu	*viTTu* occurs as a postposition to express source of motion 'from'	From	*kumaar viiTTai viTTu ooTinaan* 'Kumar ran away from the house'
viTa	*viTa* occurs as a postposition to express comparison 'than'	Than-relation	*rakiim raajaavai viTa uyaram* 'Rahim is taller than Raja'.
poola *maatiri*	*poola* and *maatiri* occur as postpositions to express comparison 'like'	Like-relation	*raajaa kuzhandtaiyai-p poola azhutaan* 'Raja cried like a child.'
koNTu *vaittu*	*koNTu* and *vaittu* express instrumental function otherwise	Instrumental relation	*kumaar kattiyaik koNTu/ vaittu pazhattai veTTinaan.*

Post *Position*	*Descriptive details*	**Case relations**	**Examples**
	expressed by the case suffix *aal*.		'Kumar cut the fruit with a knife.
munniTTu	*munniTTu* as a postposition expresses the meaning 'for, for the purpose of', in connection with'.	For- relation	*avaL kalyaaNattai munniTTu uurukkup pooyirukkiRaaL* 'She has gone to village for marriage'

4.2.5.1.5. Locative case + postpositions

The following table shows different postpositions occurring after accusative case their descriptive details and case relations along with examples.

Postposition	**Descriptive Details**	**Case relations**	**Examples**
irundtu	*irundtu* added after locative *-il* and other locative post positions gives the meaning 'from'	Source	*avan viiTTilirundtu veLiyeeRinaan* 'He left the house' *avan marattin meelirundtu iRangkinaan* 'He got down from the tree'
vaittu	*vaittu* added after locative *il* gives the meaning 'at'	Locative	*avaL maicuuril vaittu avanaip paarttaaL* 'She saw her in Mysore'

4.2.5.2. Occurrence of postpositions and case markers denoting multiple argument relations

From all the above instances, it can be found that some of the postpositions occur more than in one context. The following chart will illustrate this.

S.No	Post Positions	Argument Relations
1.	*peeril*	Topic, place, cause.
2.	*meel*	Place, topic, time
3.	*mattiyil*	Place, time, event
4.	*munnaal*	Place, time, event
5.	*pinnaal*	Place, time, event
6.	*uL*	Place, time, event
7.	*vaittu*	Place, instrument
8.	*appuRam*	Place, time, event
9.	*piRaku*	Time, event
10.	*iTaiyil*	Time, place, event
11.	*ndaTuvil*	Time, place, event
12.	*koNTu*	Instrument, agency

4.2.5.3. Postpositions, cases and clitics

Some linguistics form function both as clitics and postposition depending on the situation. For example the form *kuuTa* may either be a postposition or a clitic. Consider the following sentences.

kamalaa tan aNNan kuuTa cinimaavukku vandtaaL.

'Kamala had come to cinema with her brother.'

kamalaa kuuTa cinimaavukku vandtaaL

'Kamala also came for the picture'

kuuTa in the first sentence show commitative relation and in the second sentence it is mere a clitic denoting emphasis. *kuuTa* in the first sentence can be replaced by the commitative markers ooTu and *uTan*, whereas in the second sentence it can be replaced

only by the clitic *um*.

kamalaa tan aNNan-ooTu/uTan cinimavukku vandtaaL.
'Kamala came to cinema with her brother.'
kamalaavum cinimaavukku vandaaL
'Kamala too came to cinema'

The above can be rewritten as given below:

kamalaavum avaL aNNanum cinimaauukku vandtaarkaL.
'Kamala and brother came to cinema.'

kuuTa in the second sentence gives the sense also and it cannot be paraphrased as the sentence in commitative sense.

Function of clitics is as follows:

1.Temporal
avaL vandta uTan ndaan pooneen.
'I went immediately after she came.'
2.Emphasis
ndaan taan ceyteen
'I myself did'
3.Co-ordinator
ndaanum avaLum poonoom.
4.Concessive
avaL kuTac ceyvaaL
'Even she can do.'

Thus, a clitic may roughly be said as following: A clitic is a linguistic form which can occur with almost all constituents of a sentence, except noun attributes and which has varied function such as emphasis, concession, co-ordination etc.

4.2.5.4. Summing up of postpositions and their meaning interpretations

The following table depicts different postpositions and their interpretations.

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
-ai	NP-oblique	Objective case relation	*avaL avan-aip paarttaaL*. 'She saw him'.
-aal	A set of NPs containing human instigator + *-aal*	Agent	*avan avaLaal kollappaTTaan.* **He was killed by her.**
-aal	A set of NPs containing natural force, etc. + *-aal*	Means	avan atai tiiyaal veekavaittaan. He cooked it with fire.
-aal	A set of NP having instrumental nouns + *-aal*	Instrument	avan kattiyaal aappiLai ndaRukkinaan. He cut the apple with knife.
koNTu/ vaittu	A set of NPs having instrumental nouns + *koNTu/ vaittu*	Instrument	avan aappiLai katti koNTu/vaittu veTTinaan 'He cut the apple by a knife'
-ukku 'to'	Oblique NP + *ukku*	Goal	avan cennaikku vandtaan 'He came to Chennai
-ukku 'at'	Oblique NP + *ukku*	At-temporal relation Dimension 0	avan *pattumaNikku paLLikkuuTam cenRaan* 'He went to school at 10 o' clock.

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
-il	A set of spatial oblique NPs + *-il*	At-spatial relation Dimension 0	*avan pas ndiRuttumiTattil ndiRkiRaan* 'He is standing at the bus stop'
- il	A set of spatial oblique NPs + *il*	In-spatial relation Dimension ½ Area	*ivvulakil candtooSam illai* 'There is no fun in the world'
-il	A set of spatial NPs oblique NPs + *-il*	Into-spatial relation Dimension 2/3 Volume	*peTTiyil paNam illai* 'There is no money in the box'
	A set of temporal oblique NPs + *-il*	Within	*avan oruvaarattil andta veelaiyai ceytu muTittuviTuvaan* 'He will complete the work within five weeks
-il	Temporal NP + *il*	During	avan veyyal kaalattil kuuTaarattil irundtaan He camped there for summer.
meel 'on'	A set of spatial NP in oblique NP+ *meel*	Superior spatial relation	*avan penjcin meel uTkaarndirukkiRaan* 'He is sitting on the table'
ϕ	A set of spatial	On-	*avan tingkaL kizhamai*

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
	NPs + ϕ	temporal relation	*vandtaan* 'He came on Monday'
-ukku	A set of temporal oblique NPs + *ukku*	At-temporal relation	*avan aaRu maNikku vandtaan* 'He came at six o'clock'
meel 'on, above'	NP–*ukku* or oblique NP + *meel*	Superior spatial relation	*atu avan talaikku meel tongkukiRatu* 'It hangs above his head.'
kiizhee 'under, below'	NP–*ukku* or oblique NP + *kiizh*/ *kiizhee*/ *aTiyil*	Inferior spatial relation	The dog sits under the table. meecaikku aTiyil ndaay uTkaarndu irukkiratu
mun, *munnaal* `in front of'	Spatial NP-*ukku* or oblique NP + munnaal	Anterior spatial relation	The dog sits in front of the table. *meecaikku mun/munnaal ndaay uTkaarndtu irukkiRatu.*
mun, munnaal 'in front of'	Spatial NP-*ukku mun*/ *munnaal* +	Anterior spatial relation	*avan viiTiRku munnaal ndiRkiRaan* 'He was standing before the house
mun / *munnaal munnar* 'before'	Temporal NP-*ukku* + *mun* / *munnaal* +	Anterior time relation	*avan aindtu maNikku mun/ munnaal/ munnar vandaan* 'He will come before five o' clock.'
pin, *pinnaal* 'behind'	behind + Spatial NP	Posterior spatial relation	*avan andta kaTTiTattiRkup pinnaal / pin*

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
			ndiRkiRaan. He was standing behind the building
pinnaal, pin piRaku 'after'	NP-ukku + *pin/ pinnaal piRaku*	Posterior time relation	*avan aindtu maNikkup piRaku /pinnaal/ pin vandtaan* He came after five o' clock
il + irundtu 'since'	NP-*il + irundtu*		*avan ndeeRilirundtu uTalndalamillaamal irukkiRaan* 'He was sick since yesterday.'
varai 'until, till'	Temporal NP + *varai*	Until-temporal relation	avan panniraNTu maNi varai vizhittirundtaan 'He was awake till ten o' clock'
iTam 'to'	Oblique NP + *iTam*	Goal/Benefactor	*avan avaL-iTam mootiram koTuttaan* 'He gave the ring to her.'
irundtu 'from'	1. oblique NP-*il* + *irundtu* 2. oblique NP + locative postpositions + *irundtu*	Source	*avan cennaiyil irundtu vandtaan* 'He came from Chennai' *viiTTin kuurai meel irundtu* 'From the roof of the house'.
irundtu 'from'	Temporal NP-il or NP + *irundtu*	From-temporal relation	*avan pattu maNiyilirundtu veelai ceykiRaan* 'He worked from five o' clock to 10 o' clock.'
iTaiyil between	NP-ukku + *iTaiyil* 'between'	Interior spatial	*tuuNkaLukku iTaiyail avan ndiRkiRaan* 'He

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
		relation.	is standing between two pillars.'
vazhiyaaka 'through'	Spatial NP + *vazhiyaaka*	Path	*avan kaaTuvazhiyaa* cenRaan. 'He went through the forest.'
uL 'within'	Temporal NP-*ukku* + *uL*	Interior temporal relation	*avan andta veelaiyai iraNTu ndaaTakaLukkuL muTituuviTuvaan* 'He will finish the work within two days.'
muzhuvatum 'through out'	Spatial NP + *muzhuvatum*	Pervasive	*avan avaLai cennai muzhuvatum teeTinaan* 'He searched for her through out Chennai'.
muzhuvatum 'throughout'	Temporal NP + *muzhuvatum*	Pervasive	*avaL tan paaTangkaLai iravu muzhuvatum paTittaaL* 'She studied her lessons through out night.'
ooTu, uTan	a set of NPs + *ooTu/ uTan*	Accompaniment	*avan avaL –ooTu/ uTan/ kuuTa cenRaan* 'He went with her'
aaka	NP-*ukku* + *aaka*	Purpose	*avan paNattiRk-aaka ataic ceytaan* 'He did

Preposition/ case suffix	**Case/ postpositional phrase**	**Meaning Interpretation**	**Example**
			it for money.'
aaka	NP-*ukku* + *aaka*	Recipient	*avan avaL-ukk-aaka puntakangkaL vaangkinaan* 'He bought the books for her.'
aaka	NP-*ukku* + *aaka*	Support	*avaL en-akku-aaka pazhangkaL vaangkinaaL* 'She bought mangoes for me'

4.2.6. Coordination of phrases

Coordination as we have seen in the case of English, refers to the process of conjoining two or more elements of equal categorical status of the three syntactic levels – word, phrasal, sentential - to one conjoined structure, in which all elements have equal status or rank.

N + N ↔ N

NP + NP ↔ NP

S + S ↔ S

Tamil employs two types of coordinators

1. The clitics *um* 'and' and *oo* 'or' and *aa* (whether) or', all of which occur after each element conjoined.
2. Free forms, that is co-coordinating conjunctions occurring in-between the elements conjoined:

   allatu 'or', *illaiyaanaal* 'or' , *aanaal* 'but'

For the convenient of discussion the following three types of co-ordination can be distinguished:

1. 'and' coordination – unmarked conjunction
2. 'or' coordination - disjunction
3. 'but' coordination - adversative conjunction

4.2.6.1. 'And' coordination

The 'and' coordination in Tamil can be represented as follows:

X-um + X-um → X

X represents the lexical categories such as nouns, verbs, postpositions, and adverbs and phrasal categories such as noun phrases, postpositional phrases and clauses such as infinitive clauses and verbal participle clauses.

Type of co-ordination	**Structure**	**Example**
Noun coordination	N-*um* + N-*um* ↔NP	*umaavum uSaavum paLLikkup poonaarkaL* 'Uma and Usha went to school'
Postposition coordination	NP-ukku + P-*um* + P-*um* ↔ PP	*viiTTukku munnaalum pinnaalum marangkaL niRkinRana* 'There are trees in front and at the back of the house'
Adverb coordination	Adv-*um* + Adv-*um* ↔ AdvP	*kaNNan angkum inngkum alaindtaan* 'Kannan walked here and there'
Noun phrase coordination	NP-um + NP-um ↔ NP	*kaNNan oru toocaiyum iraNTu iTTaliyum*

Type of co-ordination	Structure	Example
		caappiTTaan 'Kannan ate one dosa and two idlies'
Postpositional phrase coordination	NP-*ukku* P-*um* + NP-*ukku* + P-*um* ↔ PP	*koovilukku munnaalum paLLikku pinnaalum aaTkaL ndiRkiRaarkaL* 'There are people in front of the temple and at the back of the school'
Infinitive clause-coordination	NP…V-INF-*um* + V-INF-*um* V-FIN	*KaNNan meeTaiyil aaTavum paaTavum toTangkinaan* 'Kumar started dancing and singing on the stage'
Verbal participle clause coordination	NP + Verbal participle-*um* + Verbal participle-*um* ....V-FIN	*kamalaa meeTaiyil aaTiyum paaTiyum pizhaikkiRaaL* 'Kamala earns livelihood by dancing and singing on the stage'

4.2.6.2. 'Or' coordination

There are five 'or' coordinators in Tamil:

1. The co-ordinating conjunction word *illaiyenRaal* 'or'
2. The coordinating conjunction word *allatu* 'or'
3. The clitic *oo*
4. The clitic *aavatu*
5. The interrogative clitic *aa*

The coordination can be represented by the following rules.

X + illaamal + X ↔ X

X + allatu + X ↔ X

X-oo + X-oo ↔ X

X-aavatu + X-aavatu ↔ X

X-aa + X-aa ↔ X

Nouns, postpositions, adverbs and quantifiers can be coordinated by the four types of coordinators listed above. Adjectives can be conjoined with the two coordinating conjunctions *illaiyenRaa*l and *allatu.*

Type of 'or' coordination	**Structure**	**Example**
Noun coordination	N + Coord N ↔ NP	*kaNNanin tangkai illaiyenRaal/allatu tampi ingkee varuvaarkaL* 'Kannan's sister or brother will come here' *kaNNanin tangkaiyoo tampiyoo ingkee varuvaarkaL* Kannan's sister or brother will come here' *KaNNanin tangakaiyaavatu tampiyaavatu ingkee varuvaarkaL '* Kannan's sister or brother will come here'
Adverb coordination	Adv + Coord + Adv ↔ AdvP	*kaNNan ingku illaiyenRaal/allatu angku varuvaan* 'Kannan will come here or there'
Quantifier coordination	Quan + Coord + Quan ↔ Quan P	*avaL konjcam illaiyenRaal/allatu atikam caappiTuvaaL* 'She will eat less or more'

4.2.6.3. 'But' coordination

The 'but' coordinator in Tamil consists of the conjunction word *aanaal* 'but', which occurs in-between the two elements conjoined, as represented by the following:

X *aanaal* X → X

X represents adjectives, nouns+aaka, postpositional phrases, adjectival clauses, and finite clauses.

Type of 'but' coordination	**Structure**	*Example*
1.Adjective coordination	Adj *aanaal* + Adj ↔ Adj P	*avaL azhakaana aanaal aapattaana peN* 'She is beautiful but dangerous woman'
2.Noun-*aaka* coordination	Adv + *anaal* + Adv ↔ Adv P	*avaL viraivaaka aanaal kavanamaaka ndaTandtaaL* 'she walked fast but carefully'
3.Postpostional phrase coordination	NP-*ukku* + Po + *aanaal* + NP-*ukku* + Po ↔ PoP	*avaL aindtu maNikkup piRaku aanaal aaRu maNikku mun vandtuviTuvaaL* 'She will come after five but before six o'clock'
4.Adjectival clause coordination	V-RP + *aanaal* + V-RP ↔ [V-RP + *aanaal* + V-RP] Adj Cl	*enakku ndalla pazhutta aanaal azhukaata pazhangkaL piTikkum* 'I like well ripped but not rotten fruits'
5.Finite clause coordination	NP…V-FINITE + *aanaal* …V-FINITE ↔ [NP…V-FINITE + *aanaal* …V-FINITE] S	*avaL ingku vandtaaL aanaal enniTam peecavillai* 'She came here, but did not talk to me'

4.3. Building of clauses

Tamil resorts to coordination and subordination for building compound and complex constructions. Tamil has a large system of complex sentence formation involving the embedding or adjoining of a clause into another sentence. When a clause is embedded into or adjoined to the structure of another sentence in Tamil, it is either embedded as co-constituent or complement to the left of a head constituent (i.e. complementation) or it is embedded into a noun phrase as sole constituent of the noun phrase (nominalization).

4.3.1. Complementation

Four types of complementation can be distinguished in Tamil

1. Noun phrase complementation
2. Postpositional phrase complementation
3. Predicate complementation
4. Adjoined complementation

The following table depicts the four types of complementation with description, pattern and example.

Type of complementation	**Description**	**Pattern**	**Example**
Noun phrase complementation	A clause can be embedded into a noun phrase as complement to the left side of a head or head noun phrase.	NP ↔ S + NP	[[*kuTiyirukka*]S [*vacatiyaana viiTu*]NP]]NP 'the house to live comfortably'
Postpositional complementation	A clause can be embedded into a postpositional phrase as complement or	PP ↔ S + P	[[*avanai paartta*]S *pinnar*]]PP

Type of complementation	Description	Pattern	Example
	argument to the left side of the postpositional head.		
Predicate complementation	A clause can also be embedded into a sentence as complement to the left side of the verbal predicate.	S ↔ NP + S + V	[[*avan*]NP [*marattilirundtu oru maangkaay vizhak*]S [*kaNTaan*]VP]]S
Adjoined complementation	A clause can be adjoined to the left side of the matrix sentence.	S ↔ S + S	[[*kaNNan kallaal aTikka*]S [*maratilirundtu maangkaay vizhundtatu*]S]S

Tamil employs the following devices to mark complementation:

1. Non-finite and nominalized verb forms

umaa jappaan pooka virumpukiRaaL

Uma Japan go_INF like_PRES_PNG

'Uma wants to go to Japan'

ndeeRRu avaL paaTinatai ndaan keeTTeen

yesterday she sing_PAST_RP_NOM I hear_PAST_PNG

'I heard her singing yesterday'

2. Complementizing verbs

KaNNan ndeeRRu vandtaan enRu aRindteen

Kannan came_PNG COM know_PAST_PNG

'I heard that Kannan came yesterday'

3. Complementizing nouns

Most of the complementizing nouns belong to the semantic category of time, manner, or measure and express thus various temporal, manner, etc. relations between the embedded clause and the matrix clause

4.3.2. Nonfinite clauses

There are four types of non-finite clauses in Tamil.

1. Infinitive clause
2. Verbal participle clause
3. Conditional clause
4. Adjectival clause

4.3.2.1. Infinitive clauses

Infinitive form has been introduced by adding the infinitive marker *a* to the verb stem. As a tenseless verb form, the infinitive form is an appropriate verb form to occur in complements whose time reference is determined by the meaning or time reference of the complement taking predicate.

NP + [….V-INF]S + V-FINITE

kaNNan viiTukkup pooka virumpinaan.

'Kannan house_DAT go_INF wanted_he

'Kannan wanted to go home'

The infinitive clauses, which are headed by an infinitive form of a verb, are embedded in a number of combinations in the formation of sentences.

Type	**Description/Pattern**	**Example**
Complement to verbs	The infinitive clause occurs as a complement to verbs and depending on the matrix verb with which it is collocated it imparts meaning to the combinations.	*kaNNan amaiccarai azhaikka virumpinaan* 'Kannan wanted to call the minister'
Complement to elocutionary verbs	The elocutionary verbs such as *col* 'say'	*kumaar avaLai varac connaan* 'Kumar asked

Type	Description/Pattern	Example
	complement an infinitive clause. NP + Infinitive clause + *col* type of verbs	her to come'
Complement to verbs of perception	Certain verbs of perception, complement an infinitive clause. NP + Infinitive clause + certain verbs of perception	*kaNNan avaL ankee ndiRkap paarttaan* 'Kumar saw her standing there'
Complement to certain auxiliary verbs denoting mood, aspect, etc.	The infinitive verbal form of the infinitive clause is collocated with a number of auxiliary verbs such as *paTu, cey, paNNu, vai, poo, iru, veeNTu, kuuTum* to impart secondary meanings such as aspect, mood etc. NP + Infinitive clause + a set of auxiliary verbs	*avaL kuzhandtaiyai tuungka ceytaaL/ paNNinaaL* 'she made the child sleep'
Complement to noun phrases	A noun phrase can also complement an infinite clause. NP+Infinitive clause +NP	*kaNNanukku avaLaip paarkka neeram illai* 'Kannan did not have time to see her'
Infinitive clause as adverbial	The infinitive clause containing the infinitive form of a verb as its head can be adjoined to or embedded into a main clause with adverbial function. The adverbial function could be purpose,	*avan avaLaip paarkka eNNinaan*`He thought of seeing her.'

Type	Description/Pattern	Example
	cause, time and result. NP + Infinitive clause + V	
"	Purpose	*kaNNan caappiTac cenRaan* 'Kannan went to eat food'
"	Cause	*kal eRiya kani vizhundtatu* 'As the stone was thrown at the fruit, it fell down'
"	Time	*kaNNan tuungka raatai paaTinaaL* 'While Kannan was sleeping, Radha sang.'
"	Result	*vaay valikka avaL peecinaaL* 'She talked so that her mouth pained'
Infinitive as Optative	The infinitive form can occupy the final position of a sentence i.e. infinitive clause can occur as a finite clause while expressing optative sense. Infinitive clause	*avaL talaiyil iTi vizha* 'Let the thunder fall on her'
Infinitive with Interrogative words	The infinitive form can occupy the final position in a sentence, that it can function as a finite clause when collocated with interrogative words. … Interrogative word + Infinitive	*ndaan enna ceyya? 'what should I do'*
Infinite clause+*aa*	Infinitive added with the	*ndaan varavaa? 'Shall I*

Type	Description/Pattern	Example
	interrogative suffix can occupy the final position in a sentence. Infinitive clause-*aa*	*come?'*
Immediateness in an action followed by another action	Infinitive form can express that an action is followed by another action immediately or as a consequence of the first action.	*ndaan tara avan* *vaangkikkoNTaan* ' As soon as I gave him, he received it'
Simultaneity in the action	The infinitive clause can be embedded in a matrix clause in such a way that the events expressed both by the embedded verb and the matrix verb occur simultaneously. Infinitive clause + S	*avan paaTa avaL aaTinaaL* 'While he sang, she danced'
Infinitive+*um*	When the clitic *–um* is added to the infinitive form of a verb of an infinitive clause, it will express that the event denoted by the matrix verb follows the event denoted by the infinitive verb immediately. Infinitive clause-*um* + S	*talaivar varavum vizhaa toTangkiyatu* 'As soon as the president came the function was started'
Repetitive action	The infinitive form of an infinitive clause can be reduplicated so that the	*maram veTTa veTTa tuLirttatu* 'Even though the tree is cut repeatedly,

Type	Description/Pattern	Example
	event can be visualized as if they are repeated.	it sprouted’

4.3.2.2. Verbal participle clauses

The Verbal participial clauses are those whose head is a verb in verbal participle form. The verbal participial form is having the following morphological structure:

Verb+PAST/Negative +Verbal participial suffix

There are two types of verbal participles: a positive and a negative. The structure of the postive verbal participle has been represented as given below:

verbs stem + past tense marker + verbal participle suffix.

ex.

umaa avanaip paarttu cirittaaL

'Having looking at him Uma smiled'

The structure of the negative verbal participle is as given below:

1. verb stem + negative suffix *aa* + verbal participle suffix *mal*
2. verb stem + negative suffix *aat* + verbal participle suffix *u*

ex.

kalaa viiTTukkup pookaamal koovilukkuc cenRaaL

'Having not gone to house, Kamala went to temple'

A simple verbal participle clause shows the following structural pattern.

NP + […V-PART]S + V-FINITE

Type	Description/Pattern	Example
Verbal Participle as adverb	Certain verbal participle forms of the verbs have lexicalized as adverbs.	*varai* ‘go fast’ *viraindtu* ‘fast’ *kaTi* ‘reprove’ *kaTindtu* ‘reprovingly’
Verbal participle form with auxiliary verbs	Verbal participle form of a main verb combines with one or two or a series of	*avan viiTTukku vandt-irukkiRaan* ‘He has come home’

Type	Description/Pattern	Example
	auxiliary verbs such as *iru, koL, poo, viTu, aruL, aaku, paar,* etc. denoting aspectual meaning, modal meaning, etc. (see verbal compounding for details).	
Sequential events	Verbal participle form can be used to link one are more events expressed by verbs. The participle forms can be given side by side or can be separated by other words. Even the auxiliary verbs take verbal participle form to link with other verbs.	*kaNNan uurukkup pooy vandtaan* 'After having gone to village, Kannan came back'
Verbal participle form as the part of an event	There are instance in which the verbal participle form is the part of an event.	*avan puttakattai eTuttuk koTuttaan* 'After having taken the book, he gave me'
Simultaneous event	Verbal participle form can link verbs, which denote events that take place simultaneously.	*avar vaNTiyai ooTTic cenRaar* 'He went by driving the cart'
Reason or cause	Verbal participle form can be used to link an event which is a cause with another event which the effect of the first event.	*avan paampu kaTittu iRandtaan* 'Having bitten by snake he died'
State	The verbal participle forms can be used to denote the state of the	*kuLam taamarai puuttu, alli malarndtu kaaNappaTTatu* 'The

Type	Description/Pattern	Example
	subject of an event.	pond is seen with blossomed lotus and Lilly'
Repetitive event	The reduplicated verbs can be linked by verbal participle forms to the main verb and the event will be shown as being repeated for many times.	*avan ceTiyai veTTi veTTi eRindtaan* 'He cut the plants repeatedly and threw them out'
Condition	The verbal participle forms, *inRi* and *anRi* of the negative verb *il* and *al* respectively function as postpositions expressing the meaning 'without' and 'except'.	*ndii inRi andtak kaariyam ndaTaipeRaatu* 'Without you that matter will not be promoted'

Negative verbal participle form (..V-*aamal*) implies different shades of meaning depending on the contextual use of it. The structure of the clause is: […V-*aamal*]S

Type	Description	Example
Reason/Cause	[…V-*aamal*]S implies reason or cause in certain contexts.	*mazhai peyyaamal payirkaL karukina* 'The crops withered as it did not rained'
Manner	[…V-*aamal*]S implies manner in some contexts.	*taNNiiraic cindtaamal eTuttuvaa* 'Bring the water without spilling'
State	[…V-aamal]S implies a state in certain contexts.	*avar kaNNaaTi aNiyaamal vandtaar* 'He came without wearing spectacle'

Accompaniment	[…V-aamal]S implies the non-occurrence of an event when collocated with another event as if they are co-occurring.	*kaNNan paTikkaamal uTkaarndtirukkiRaan* 'Kannan is sitting without studying'
Condition	[…V-*aamal*]S can imply condition in certain context. The conditional meaning will be felt only if the matrix verb is in interrogative form or negative form.	*paTikkaamal teervil veRRi kiTTumaa?* 'Can one get success in the examination without studying?'

4.3.2.3. Conditional clauses

A simple conditional clause shows the following pattern.

[…V-COND]S

Tamil distinguishes between positive and negative conditional forms. The structure of the positive conditional form is as given below:

Type	**Pattern**	**Example**
Positive conditional clause	Verb stem + Past tense suffix + conditional suffix *aal*	*umaa kuuTa vandtaal ndaan cinimaavukkup pooveen* 'If Uma accompanies me, I will go to cinema'
Negative conditional clause	Verb stem + negative suffix *aa* + conditional bound form *viTTaal*	*umaa kuuTa varaaviTTaal ndaan cinimaavukkup pooka maaTTeen*. 'If Uma does not accompany me, I will not go to cinema'

The following table shows different types of conditional clauses:

Type	Description	Example
Conditional clause with question words	Conditional clause can be followed by question word like *enna*	*ndii ennooTu vandaal enna?* 'Why don't you come with me?'
Conditional clause with clitic *taan+ee*	Conditional clause can be complemented by a combination two clitics, *taan+ee*, whose function is emphasis. The first conditional clause functions as an adverbial clause and the second conditional clause denote non-occurrence of the event denoted by the verb of the main clause.	*ndaan connaal avaL keeTTaal taanee* 'If she has only listened when I told her'
Probable and improbable conditional clauses	Conditional clauses are generally interpreted to mean the probability of occurrence of the events denoted by verbs in conditional form. A conditional clause can also be interpreted as a hypothetical situation that does not occur.	*mazhai peytaal tuNi ndanaiyum* 'If it rains the cloth will become wet' *ndaan oru mandtiriyaayirundaal paNakkaaran aayirupeen* 'If I were a minister I would have become a rich man'
Counter factual conditional clause + S	Conditional clause can refer a counter factual situation when the conditional verb is of the form V+PAST/NEG+PAR+*iru* +PAST+COND.	*kaNNan paTittirundtaal teervu ndanRaay ezhutiyiruppaan* 'Had Kannan studied he would have written the examination well'

Type	Description	Example
Conditional Clause + elliptical main clause	An elliptical main clause can embed a conditional clause.	*avaL angkee poonaal avamaanam* 'It is a shame if she goes there'
Conditional + *taan*	The clitic *taan* added to the conditional will emphasize on the condition.	*avaL paaTindaal taan kuzhandtai tuungkum* 'Only if she sings the child will sleep'
Conditional clause + *aavatu*	The clitic *aavatu* added to the conditional clause may imply that the subject of the embedded clause is unwilling to perform the event denoted by the conditional verb.	*avaL vandaalaavatu avaLiTam koTukkalaam* 'It would have been given to her if she had come'
Conditional + *ozhiya*	The postposition *ozhiya* added to the conditional clause express negative conditionality.	*kaNNan ingku vandtaal ozhiya onRum ndaTakkaatu* 'Nothing will happen unless until Kannan came'
Conditional clause+ *um*	When clitic -*um* is added with conditional clause, it will be interpreted as concessive conditional.	*avaL ingku vandaalum kaariyangkaL onRum ndaTakkaatu* 'No matter will be settled even if she comes here'
Indefinite concessive clause	When conditional clause carries the verb of the form V+PAST+COND+*um* collocated with a subject in interrogative pronominal form, it will imply indefinite concession.	*yaar vandtaalum ndaan payappaTamaaTTeen* 'Who so ever comes, I will not be afraid'

Type	Description	Example
Alternative condition	Two conditional clauses can be conjoined by the clitic *um*.	*avaL vandtaalum avan vandaalum enakku nallatutaan* 'Whether she comes or he comes, it is good to me'
Appellative conditional clause	Conditional suffix can be added with the appellative verb *al* to form *allaal/allaamal* which can be added to a noun as a postposition.	*ndii allaal/allaamal teyvam illai* 'Except you there is no other god'
S + *enRaal*	The conditional form, *enRaal*, of the verb en 'say', when added to a sentence will embed a sentential statement as a condition.	*mazhai peyyavillai enRaal payirkaL karukiviTum* 'The crops will wither if it does not rain'
Concessive clause + S	When clitic *-um* is added to verbal participial form, it will imply the non-occurrence of the event denoted by embedded clause in spite of the occurrence of the event denoted by the main clause.	*mazhai viTTum tuuRal niRkavillai* 'Though the rain is over it does not stop drizzling'
Conditional concessive clause + S	When clitic is added to conditional form, it will imply the non-occurrence of the event in the past denoted by the embedded clause. *If* may imply the	*kaNNan paTittaalum teervil veRRi peRavillai* 'Even though Kannan studied well he did not get success in the examination' *mazhai vandtaalum vizhaa*

Type	Description	Example
	non-occurrence of the event in the future.	*ndaTaipeRum* 'Even if it rains, the function will be held.

4.3.2.4. Adjectival/relative clauses

A simple adjectival/relative clause shows the following structural pattern.

[[…V_TENSE/NEG_RP]Adj P + NP]NP

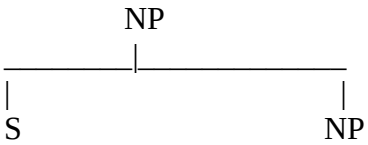
Tamil distinguishes four types of adjectival participles: three marked for the three tenses and a tenseless negative one. The structure of these adjectival participles is given below:

Verb stem + Past/Present/Negative suffix *aat* + adjectival suffix a

In the case of future adjectival participle the following is the structure:

Verb stem + suffix *um*

um represents both future tense and the adjectival morpheme. The adjectival participle is thus only tensed non-finite verb form. Syntactically, an adjectival clause occurs always in noun phrase complementation. As a complement, the relative clause comes at the left side of a head noun.



ndeeRRu ingkee vandta antdap paiyanai ndaan ndeeRRu paartteen

Yesterday here come_PAST_RP boy_ACC I yesterday saw_I

'I saw the boy who came here yesterday'

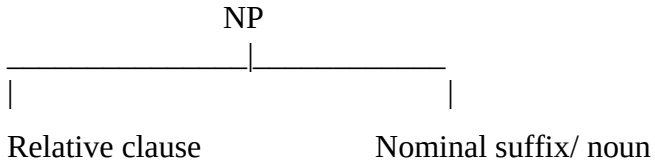
ndiingkaL kaalaiyil vaangkina paalai kuzhndtai kuTittuviTTatu

you_PL morning_LOC buy_PAST_RP milk_ACC child drank_PNG

4.3.3. Nominalized clauses

There are two types of nominalization in Tamil: nominalization on relativized forms and nominalization on non-relativized forms (i.e. directly to the verb stem).

1. The relative clause is nominalized by a noun or nominal suffix



1. Relative clause + noun ↔ NP

ndaan vaLartta ndaay

I bring up_PAST_RP dog

'the dog brought up by me'

2. Relative clause + nominal suffix *atu* ↔ NP

[*avan vandatu*]NP *enakkut teriyaatu*

he come_PAST_RP _NS know_not

'I did not know that he came'

3. Relative clause + pronominalizer (*avan, avaL, atu, avai/ana*) ↔ NP

neeRRu vandtavan

yesterday come_PAST_RP_he

'one who came yesterday'

ndeeRRu vandtatu

yesterday come_PAST_RP_it

2. The verbal stem (untensed stems) are nominalized by the suffixes *tal*, *al*, *kai,* and *mai*.

varu 'come' + *tal* > *varutal* 'coming

varu 'come' + *al* > *varal* 'coming'

varu 'come" + kai > varukai 'coming'

varu 'come' + aa (negative suffix) + *mai* > *varaamai* 'not coming'

All the nominalized forms are capable of embedding a sentence. Though they mean 'the act or process of doing something', they differ in their distribution.

kaalaiyil ezhundu kuLittal ndallatu 'It is good to bathe early in the morning'
kaalaiyil ezhundtu kuLikkal-aam 'One can bathe in the morning'
kaalaiyil ezhundtu kuLikkal veeNTum 'One should take bathe in the morning'
avaL kaalaiyil ezhundt kuLikkaiyil avan avaLai paarttaan 'He saw her while she was taking bath'

4.3.4. Verbal complement clauses

The verbal complement clauses will be complemented by the verbs such as *en, col, kuuRu, ndinai*. These verbs will be conjoined to the embedded clause by complementizers such as *enRu, ena,* and *aaka*.

Type	**Pattern**	**Example**
enRu and *ena* can complement an S in finite clause.	NP + Fininte clause + *enRu/ena* + *kuuRu*-type of verbs	*kaNNan ndaaLai varukiReen enRu/ena kuuRinaan* 'Kannan said that he would come tomorrow'
The complementizer *aaka* can embed a sentence when the verb is changed into gerundial form (i.e V-*atu* clause). The gerundial form to which *aaka* is added has the constraint that only those gerundial forms inflected for past and present tense can be complemented by *aaka*. The gerundial forms inflected for future tense cannot be complemented by *aaka*. The defective	NP + V-*atu* clause+*aaka* + *kuuRu* type of verbs	*kaNNan ndaaLai varuvataakak kuuRinaan* 'Kannan said that he would come tomorrow'

Type	**Pattern**	**Example**
verbs which are inherently inflected for future tense suffix *-um* such as *kuuTum, veeNTum, teriyum, piTikkum* cannot take *aaka* as a complementizer.		
Like the quotative verbs such as *kuuRu, col* and *en,* other verbs also can embed a complement clause with finite verb with the help of a complementizer *enRu*.	NP+ *enRu* + S	*avan kaTTurai ezutalaam enRu uTkaarndtaan* 'He sat down so that he can write an article'
enRu can complement a noun.	NP+ *enRu* + S	*kampan enRu oru kavi irundtaan* 'There was a poet named Kamban'
enRu can complement an elliptical sentence having only dative form of a noun or only defective verbal forms such as *veeNTum*.	NP-*ukku* + *enRu* + S	*avarukku enRu onRum illai* 'There this nothing for him' *eezhai enRu yaaraiyum kuRaivaaka ndinaikkaatee* 'Do not think bad of one who is poor' *veeNTum enRu avan itai ceyyavillai* 'He did not do it intentionally'
The verb *en* can be a finite verb embedding an S.	NP + S + *en*	*kaNNan ndaaLai varukiReen enRaan* 'Kannan said that he would come tomorrow'

4.3.5. Comparative clauses

In Tamil comparison is brought out by making use of simply postpositions like *poola* and *viTa/kaaTTilum*. *poola* is used for bringing out similarity and *viTa* and *kaaTTilum* for dissimilarity. Tamil makes use of pronominalized forms of adjectives instead of adjectives.

rooci avaL cakootiriyaip poola aarookkiyamaanavaL
'Rosy is as healthy as her sister'
rooci avaL cakootiriyaik kaaTTilum/viTa kuRaindta aarookkiyamaanavaL

'Rosy is less healthier than her sister'

poola, poonRu, maatiri, viTa, kaaTTilum as complementizers can complement a sentence for bringing out comparison. There are two sets in this category of complementizers: complementizers for expressing similarity and (ii) complemntizers expressing difference. The complementizers, *poola, poonRu* and *maatiri* belong to the first type and the complementizers, *viTa* and *kaaTTilum* belong to the second type.

4.3.5.1. Complementing similarity

The complementizers such as *poola, poonRu* and *maatiri* can be used to express similarity. The verb of the complement clause will be in gerundial form, which could be inflected for all the three tenses.

avaL maan ooTukiRatu poola/poonRu/maatiri ooTukiRaaL
she deer run_PRES_it_ACC similar run_PRES_she
'she runs like a deer'

The verb in the embedded clause can be deleted.

avaL maan poola/poonRu/maatiri ooTukiRaaL
she deer similar run_PRES_she
'She runs like a deer'

Among the three complementizers mentioned above, *maatiri* can be collocated with verbs in relative participle form.

avaL maan ooTukiRa maatiri ooTukiRaaL

she deer run_PRES_RP similar run_PRES_she

'She runs like a deer'

poola and *poonRu* can be collocated with the verbs in conditional form marked with -aal and inflected for past tense.

avaL maan ooTinaaRpoola ooTukiRaaL

she deer run_PRES_RP similar run_PRES_she

'she runs like a deer'

There are instances in which the comparison is metaphorical or simile in which the verb denoting the embedded event differs from the verb denoting the matrix event.

avan iTi iTittaaRpoola uNarndtaan

he thunder thunder_PAST_COND similar feel_PAST_he

'he felt as if it has thundered'

avan vandtatu teyvamee vandtaaRpoola irundtatu

he come_PAST_it god_EMP come_COND_similar be_PAST_it

'His coming is like that of the coming of the god'

avanukku teeL koTTiya maatiri irundtatu

he_DAT scorpion bite_PAST_RP similar be_PAST_it

'he felt as if he was bitten by a scorpion'

4.3.5.2. Complementing difference

The complementizers such as *viTa* and *kaaTTilum* can bring out the difference These complementizers are added to the embedded clause containing the verb in gerundial form, which are further inflected for accusative case.

kaNNan ooTiyatai viTa/kaaTTilum raaman veekamaaka ooTinaan

Kannan run_PAST_GER_ACC more than Raman fast run_PAST_he

'Kannan ran faster than Raman'

Here also the verb in the complement clause can be deleted.

kaNNanai viTa/kaaTTilum raaman veekamaaka ooTinaan

Kannan_ACC more than Raman fast run_PAST_he

'Kannan ran faster than Raman'

4.3.6. Adverbial clauses

A good number of postpositions come after non-finite forms of verbs or nominalized forms of verbs forming adverbial clauses. They show various types of temporal relations as well as manner. The following table illustrates the point.

Type	**Pattern**	**Example**
Anterior time relation	V-FUT-*atu*-clause + *mun/ munnar/ munnaal/ munpu*	iraaman varuvataRku mun/munnar/munnaal/munpu kaNNan vandtuviTTaan 'Kannan had come before Raman came'
Posterior time relation	1. Adjectival Clause + *pin/ pinnar/ pinnaal/, pinpu/piRaku* which can be glossed as 'after' added to past expresses 2.V-PAST-atu-clause-DAT to express the same temporal time relation discussed above.	*raaman vandta pin/pinnar/pinnaal/pinpu kaNNan vantdaan* 'Raman came after Kannan came' *avan caappiTTataRku appuRam avaL caappiTTaaL* 'She ate after he ate'
Posterior time relation	V+PAST+*atu*+ACC + *aTuttu/toTarndtu*	*avaL paaTalai aTuttu/toTarndtu avan paaTinaan.*

Type	**Pattern**	**Example**
		'He sung immediately after she had sung'
Simultaneous time relation	Adjectival clause + *pootu*/*pozhutu*	*ndaan paaTum pootu/pozhutu avaL paaTuvaaL* 'she will sing while I sing'
Simultaneous time relation	Adjectival clause + *ndeerattil/ camayattil* denoting the first event.	ndaan paaTum atee camayattil avaL veenai vaacittaaL When I sang she played veena.
Consecutive time relation	1.Infintive clause + *uTan* 2.V+PAST+atu-um	*talaivar vandtavuTan kuuTTam toTangkiyatu* 'The meeting was started as soon as the president came' talaivar vandtatum kuuTTam toTangkiyatu 'the meeting was started as soon as the president came'
Interposal time relation	V-FUT-*atu*-clause+DAT + *iTaiyil*	*avan paaTuvataRkum avaL paaTuvataRkum iTaiyil ndaan paaTineen* 'I sang in between the performances of his singing and her singing'
Interior time relation	V-FUT-*atu*-clause-DAT + uL/uLLee	*avan caappiTuvataRkuL avaL vandtuviTTaaL* 'she came before he finished eating.
Inceptive time relation	V-PAST-a*tu*-clause +LOC + *irundtu*	*raaman vandtatilirundtu kaNNan avanuTan peecikkoNTirukkiRaan* 'Kannan is talking with Raman from the time when Raman came'

Type	**Pattern**	**Example**
Terminative time relation	1. V-FUT-RP clause + *varai* 2. V-FUT-*atu* clause + *varai*	*avaL tan kaNavan varum varai kaattirundtaaL* 'she waited for her husband to come' *avaL tan kaNavan varuvatu varai kaattirundtaaL* 'She waited for her husband to come'
Manner 1	1.Infinitive-clause + *paTi/ maatiri/ vaNNam/ aaRu* *2.atu*-clause + *poola*	*avaL conna paTi/ maatiri/ vaNNam/ aaRu avan keeTpaan* 'he will act as she said' *avaL connatu poola avan keeTpaan* 'he will act as she said'
Manner 2	1.Infinitive clause + *paTi/ vaNNam/ aaRu* 2. Infinitive clause + *maatiri*	*avaL azhuta paTi/ vaNNam/ aaRu irundtaaL* 'she remained crying' *avaL varukiRa maatiri terikiRatu* 'It appears that she is coming'
Compulsion	Verbs of Expression, it will be implied that the event denoted by the embedded verb is demanded.	*avaL avanaip paTikkum paTi/ aaRu vaRpuRuttinaaL* 'she compelled him to study'
Purpose	*um*-adjectival clause + *paTi*/*aaRu* With certain matrix clause *paTi* and *aaRu* may imply purpose.	*mandtiriyai paarkkum paTi/aaRu avan vandtaan* 'He came to see minister'
Extent	V-PAST-RP clause + *aLavu/ maTTum/ varai*	*avaL tannaal muTindta aLavu/ varai/ maTTum muyaRci ceytaaL* 'She tried to her maximum extent possible'

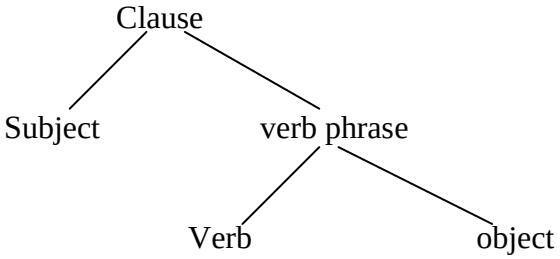
4.4. Building of sentences

The building of sentences is dealt under the following heads:

1. Word order
2. Building of different types of sentences
3. Coordination of sentences

4.4.1. Word order

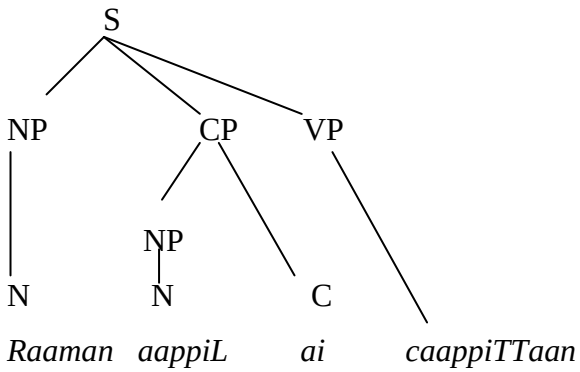
In languages like Tamil, word order is more flexible, as grammatical relations are signaled by inflections. In generative linguistics, languages with fairly free word order are non-configurational languages. The core of the configurationality issue is about the question of special grammatical relation of subject and a different one of object, whatever these relations correspond to different positions in the hierarchy of the sentence. In Tamil there is little or no evidence for a hierarchy as given below.



It is generally believed that Tamil lacks of VP constituency. So generally Tamil sentences are given a flat structure without VP being at a different hierarchical level. Tamil is an SOV language in which 'S' and 'O' can be shuffled. Tamil is not strictly a configurational language. In Tamil the object is decided by case markers.

raaman aappiLaic caappiTTaan

'Rama ate an apple'



The ordering of the constituents may be linear or sequential in Tamil

1.SOV linear order

kajeesvari indta puttakattai paTittirukkiRaaL

'Gajeswari has read this book'

2. Fused order

paTittirukkiRaaL

read_PASTP_she

In Tamil, the interrogation does not change the word order.

Many interesting points will be revealed for the purpose of transferring English language structure into Tamil, if we look at the correlating features of the two languages from the point of view of their typological characteristics as SOV and SVO languages respectively. Syntactically, English and Tamil are perhaps most saliently different in the basic word order of verb, subject, and object in simple declarative clauses. Tamil is an SOV language, meaning that the verb tends to come at the end of basic clauses. Tamil being SOV language has postpositions.

Tamil is a typical (S)OV language in which the verb occurs at the final position of a sentence. Word order in the sentence is relatively free, as long as the sentence ends with a main verb. For example, the sentence *Kannan introduced Uma to Raja* in Tamil can have the following word-order variants.

1. S O IO V

kaNNan umaavai raajavukku aRimukappaTuttinaan.

2. S IO O V

kaNNan raajaavukku umaavai aRimukappaTuttinaan.

3. O IO S V

umaavai raajaavukku kaNNan aRimukappaTuttinaan.

4. IO O S V

raajaavukku umaavai kaNNan aRimukappaTuttinaan.

5. IO S O V

raajaavukku kaNNan umaavai aRimukappaTuttinaan.

6. O S IO V

umaavai kaNNan raajavukku aRimukappaTuttinaan.

ai and *kku* are accusative and dative case markers and nominative is unmarked in Tamil. The above sentences are identical in logical content, but are different in discourse presupposition in a very subtle way. Ordinarily, constituents that represent older information precede those that represent newer information. The subject-initial sentence pattern is the most common among the various word order patterns. In declarative sentence with nominal subject and object, the dominant order is almost always one in which the subject precedes the object. The freedom of word order extends to adverbial adjuncts. For example, the sentence which means *He will come to see her tomorrow*, *tomorrow* can come anywhere before the verb.

1. *ndaaLai avan avaLai paarkka varuvaan*
2. *avan avaLai ndaaLai paarkka varuvaan*
3. *avaLai ndaaLaip paarkka avan varuvaan*
4. *ndaaLai avaLaip paarkka avan varuvaan*

4.4.2. Building of different types of sentences

Sentences can be differentiated into different types based on their structure and function.

4.4.2.1. Sentence types based on the complexity of clauses

Traditionally sentences are classified as simple, compound and complex. This distinction is based on the criterion whether the sentence contains a single verb or verb phrase or more than one verb phrase. It has been explicated traditionally that a simple sentence contains at least one verb or verb-phrase. Compound and complex sentences contain more than one verb or verb phrase. Accordingly simple sentences have only one finite verb, compound sentences have two or more finite verbs and complex sentences have one finite verb and one or more infinite verbs.

1.Simple sentence

avan maarkeTTukkup pookiRaan

'He goes to market'

2.Compound sentence

avan maarkeTTukkup poonaan. kaaykaRikaLai vaangkinaan.

'He went to market and bought some vegetables'.

3.Complex sentence

avan kaaykaRivaangka candtaikkup pookiRaan

'He is going to market to buy vegetable'

A Tamil sentence can be analysed as containing either NP and VP or NP and NP.

S↔ NP+VP

S ↔ NP+NP

Tamil sentences need not have a verb always.

1. S ↔ NP + VP

avan paaTam paTittaan

he lesson read_PAST_PNG

'He read the lesson'

2. S ↔ NP + NP

avan oru maaNavan

he one student

'He is a student'

The equative sentence denoting existence does not contain a verb in Tamil. The verbless existential sentences are possible while denoting present existence, but to denote a past and future existence, the be-verb *iru* which can carry tense is being used in Tamil, the noun complement will take the adverbial *aay* / *aaka*.

avar oru aaciriyaraay irundaar

he one teacher_ADV be_PAST_PNG

'He was a teacher'

This point has to be noted down while transferring the information in English into Tamil.

4.4.2.2. Sentence types based on their function

Traditionally sentences have been classified based on its function into the following types:

1. Affirmative or assertive sentences

avan candtaikkup poonaan

He went to market

2. Question or interrogative sentences

avan candtaikkup pookiRaana?

Is he going to market?

3. Negative sentences

avan candtaikkup pookavillai

He is not going to market

4. Imperative or command sentences

candtaikkup poo

Go to market

5. Exclamatory sentences

aa! evvaLavu azhakaana kaTTiTam itu!

'How beautiful the building is!'

In Tamil word order does not play a crucial role while transforming an affirmative into an interrogative sentences, it makes use of clitics.

4.4.2.2.1. Building of affirmative or assertive sentences

In Tamil, we can visualize assertive sentences as having at least five elements namely subject, predicate, attribute to subject, expansion of predicate particles and particles. In Tamil, as in English, minimal sentence can be classified into equative type and non-equative type.

4.4.2.2.1.1. Building of equative sentences

Equative sentences can be distinguished into:

1.Sentence having no verbs (verb less clauses)

2.Sentences having verbs

There is a type of equative sentences in which 'S' can be expanded into two noun phrases.

S ↔ NP + NP

kajeeSvari mikavum ndalla peN

'Gajeswari is a very good girl

Semantically, verb less clauses represent an identification or attribution.

ex.

1. Equate for identification

avan oru maaNavan 'He is a student'

2. Equate for attribution

avaL azhakaanavaL 'She is a beautiful girl'

There are equative type of sentences in which BE verbs (*uNTu* 'is/are', *iru* 'be', *illai* 'be not', *alla* 'be not' and copula verbs (*aaku* 'become, be' for the sake of are used for marking tense or emphasizing positive or negative existence. The different types of equative sentences using these verbs are tabulated below:

Equative verb	**Pattern**	**Example**
uNTu	NP + *uNTu*	*kaTavuL uNTu* 'God exists'
iru	NP + *iru*+TENSE+PNG	*kaTavuL irukkiRaar* 'God exists'
iru	NP-*iTam* + NP + iru+TENSE+PNG	*enniTam paNam irukkiRatu* 'I have money'
illai	NP + *illai*	*kaTavuL illai* 'God does not exist'
illai	NP + NP-*illai*	*avaL ndallavaL illai* 'She is not a good lady'
alla	NP + NP-*alla*	*avaL ndallavaL alla* 'She is not a good lady'
aaku	NP + NP-*aaku*+FUT+PNG	*avan ndallavan aavaan* 'He is a good man'
aaku	NP + NP-*aaku*+PRES/PAST+PNG	*avan mandtiri aanaan* 'He became a minister'

4.4.2.2.1.2. Building of non-equative sentences

In Non-equative sentences in Tamil contain a verb and is, thus different from equative sentences.

kamalaa kaTitam ezhutukiraaL

Kamala letter write_PAST_PNG

‘Kamala wrote a letter’

So non-equative sentences can be expanded as NP (headed by an N) followed by VP (headed by a verb).

S ↔ NP + VP

kaamaakshi ezhutukiRaaL

‘Kamakshi is writing’

paRavaikaL paRakkinRana

‘The birds are flying’

4.4.2.2.2. Building of interrogative sentences

Like English, Tamil has also two types of question sentences. As we noted under English the first kind can be referred as Yes or No question type. The following sub types of interrogative distinguished in Tamil.

1. Yes-no questions
2. Information or question word questions
3. Alternative questions

4.4.2.2.2.1. Yes-no questions

Yes-no questions are asked to know whether the contents of the proposition supplied by the speaker are true or not. Yes-no question in Tamil is formed by the suffixation of interrogative clitic *aa* to a constituent of a sentence. This clitic can be added to any constituent; except modifiers (noun modifier).

umaa oru paaTTup paaTinaaL

‘Uma sang a song’

umaavaa oru paaTTup paaTinaaL ? (The subject is questioned)

'Did uma sing a song?'

umaa paaTTaa paaTinaaL? (The object is questioned)

Is it song, did Uma sing?

umaa paTTup paaTinaaLaa? (The whole sentence is questioned)

'Did Uma sing a song?'

umaa azhakaakavaa paaTTup paaTinaaL?
'Did Uma sing well?'

Note that if the interrogative clitic is suffixed to the sentential final position (i.e to the inflected verb or to the nominal predicate), the question is interpreted as a neutral one in which the scope of the clitic *aa* is the whole S, that is, it interrogates the whole of the sentence.

kaNNan oru vazhakkaRinjar
'Kannan is an advocate.'
kaNNan vazhakkaRinjaraa?
'Is Kannan an advocate?'
kaNNan neeRRu uSaavai aTittaan
'Kannan beat Usha yesterday'
kaNNan neeRRu ucaavai aTittaanaa?
'Did Kannan beat Usha yesterday?'

If the interrogative clitic *aa* is placed on some other constituent of the sentence, a focussed yes-no question results. That is, the constituent to which clitic *aa* is added is interrogated. The remainder of the proposition is presupposed.

uSaa ndeeRRu umaavaiyaa aTittaaL?
'Was it Uma, did Usha beat yesterday?'
uSaa ndeeRRaa umaavai aTittaaL?
Was it yesterday that Usha beat Uma?
uSaavaa neeRRu umaavai aTittaaL?

Was it Usha that beat Uma yesterday?

4.4.2.2.2.2. Wh-questions or information questions

Information questions, which are otherwise known as question word questions, presuppose a proposition and interrogate the proposition for particular information. Such

questions interrogate only a constituent of the sentence. Information questions are formed in Tamil by an interrogative pro-form and by realizing the constituent to be questioned with an interrogative pro-form that is referentially undetermined. Unlike English the devices such as movement of constituents etc are not used. Tamil has a number of interrogative proforms such as pronominal, pro-adverbial, pro-numerals, pro-adjectival, etc. All expect one (*yaar* 'who') contains the interrogative morpheme *e*. The different proforms used in Tamil are tabulated below.

Reason	**Person**	**Dietic**	**Things**	**Place**	**Time**	**Manner**	**Quantity**
een	*yaar* *evan* *evaL* *evar* *evarkaL*	*endta*	*etu* *evai* *evaikaL* *enna*	*engku* *engkee*	*eppozhutu* *eppootu* *enRu*	*eppaTi*	*evvaLavu* *ettanai*

The following table shows the usage of the above listed interrogative words.

Type	**Statement**	**Question**
Time	*uSaa neeRRu vandtaaL* 'Usha came yesterday'	*uSaa eppootu vandtaaL*? 'When did Usha come?'
Place	*uSaa angkee vandtaaL* 'Usha came there'	*uSaa engkee vandaal* 'Where did Usha come?'
Quality	*uSaa ndalla peN* 'Usha is *a good* girl.'	*uSaa eppaTippaTTa peN*? 'What type of a girl Usha is?'
Serial Order	*uSaa pattaavatu vakuppil paTikkiRaaL* Usha is studying in tenth standard.	*USaa ettanaiyaavatu vakuppil paTikkiRaaL*? 'In which class usha is studying?'
Reason	*kaNNan avaLaip paarkka vandtaan* 'Kannan came to see her'	*kaNNan een vandtaan?* 'Why did Kannan come?
Person	*kaNNan vandtaan* 'Kannan came'	*yaar vandatu?/vandaar?* 'Who came?'

Type	Statement	Question
Deictic	*kaNNan andta puttakattaip paarttaan* 'Kannan saw that book'	*kaNNan endta puttakattaip paarttaan?* 'What book did Kannan see?'
Thing	*kaNNan puttakattaip paTittaan* 'Kannan saw the book'	*kaNNan etaip paarttaan?* 'What did Kannan see?'
Manner	*uSaa ndanRaakap paTikkiRaaL* 'Usha is studying well.'	*uSaa eppaTip paTikkiRaaL*? 'How is usha studying?'

4.4.2.2.2.3. Alternative questions

Alternative question provides either two alternative propositions or one proposition and its negation. The addressee is requested to commit himself to one of the alternatives to the two propositions and its negation. In Tamil alternative questions are formed by the coordination of two sentences with deletion of some identical material from the second sentence. The alternative questions are formed by the interrogative clitic *aa* which occurs as 'or' coordinator after each element conjoined. Like the coordinating clitics *oo* and aavatu, the clitic *aa* occurs with nouns, postpositions, adverbs, and quantifiers, but not with adjectives.

avan ndallavanaa keTTavanaa enRu teriyavillai?
He good_he_clitic bad_he_clitic know_not
'It is not known whether he is good or bad'
ungkaLukku peenaavaa pencilaa veeNTum?
you_DAT pen_clitic pencil_clitic want
'Do you require pen or pencil?'

4.4.2.2.3. Building of negative sentences

Negation is expressed by the following three ways:

1. Morphologically by a negative verbal suffix
2. Lexically by a negative verb
3. Syntactically by a negative auxiliary verb

There are however no negator like *not* or negative quantifiers, or adverbs like *no one* and *nowhere* in Tamil. Negative morpheme occurs always in the inflected verb constituent, either incorporated in the verb itself or in the inflectional part.

Type	**Sub types**	**Example**
I.Morphological negation by negative verbal suffix: The negative morpheme is realized by two allomorphs *aa*, *aat* occurring as suffixes after the verb stem, and also by a zero morph.	1. V+Negative suffix+ Third person, singular number, and neuter gender suffix V+*aa+tu*	*pas ingkee varaatu* 'The bus will not come here' *enakku hindi varaatu* 'I cannot talk in Hindi'
"	2.V+Negative verbal participle suffix V+*aa-mal/aat-u*	*avaL neeRRu ennai paarkkaamal / paarkkaatu poonaaL*.'Yesterday she went without seeing me'
The negative suffix *aat* occurs in the following three verb forms.	3.V+Negative singular / plural imperative suffix V+*aat-ee* V+*aat-iirkaL*	*ingkee varaatee* 'Don't come here' *ingkee varaatirrkaL* Don't come here'
"	V+Negative adjective participle suffix V+*aat-a*	*ndaan paarkaata peN pookiRaaL* 'There goes a woman I did not see'
"	5.V+Negative suffix + Nominalising suffix V+*aat+atu*	*uSaa varaatatu ndallatalla* 'That usha did not come was not nice'
"	6.In periphrastic construction the model auxiliary *maaTTu* meaning 'will' is inflected for PNG expressing	*Usha varamaTTaaL* Usha won't come

Type	Sub types	Example
	negative polarity. The negative morph is realized by zero morph. Thus, PNG suffix is directly added to the verb stem. *maaTT u*+ Zero negative + PNG	
II. Use of negative lexical verb: Negative lexical verbs *illai* and *alla* used for negating a proposition.	1. *illai* meaning 'be not'whose function is existential and copula. 1.1. Negation in locative sense express by the negative be-verb *illai* NP-il + *illai* 1.2. Negation in existential sense expressed by *illai* (as against positive *uNTu* 'be') NP + *illai* 1.3.Negation in copula sense expressed by *illai* (against positive *aaku* 'be' or zero) NP + *illai*	1.1.*uSaa viiTTil illai* 'Usha is not in the house' 1.2.*kaTavuL illai* 'God is not there' meaning 'be not' 1.3.*umaa oru maruttuvar illai 'Uma is not a doctor'*
	2.*alla* meaning 'be not' whose function is copula only.	*avan maaNavan alla* 'He is not a student'
III Use of negative verb as an auxiliary verb:	1.Negative verb *illai* can be added after a main verb in infinite form, there by negating a proposition.	*avan neeRRu kalluurikku varavillai.*'He did not come to college yesterday'

Type	Sub types	Example
	V+infinitive + *illai*	
“	2.The negative verb *maaTTu,* which can be inflected for PNG added after infinitive form of a main verb functions as an auxiliary expressing the meaning ‘will not’. V+infinitive + *maaTT*-PNG	*umaa kalluurikkup pookamaaTTaaL*‘Uma will not go to college’

4.4.2.2.4. Building of imperative sentences

In Tamil the imperative may have the root of the verb. Modern Tamil distinguishes between singular and plural imperative forms. Both the singular and plural imperative forms are further distinguished into positive and negative forms. One of the imperative forms is also overtly marked for the category of person, second person. The various imperative forms can be analysed as phonological realization of the following morphemes underlined structure. As noted earlier imperative sentences are instructions, commands, and directions to second person.

Verb + imperative + person (negative) (plural)

The following table shows different types of imperatives:

Type	Structure	Example
1. Positive singular imperative: It is identical with verb stem and there is no marker. This shows that imperative and second person morphemes are not overtly	V+ϕ	*tuungku* 'sleep' *keeL* 'ask' *ndaTa* 'walk'

Type	**Structure**	**Example**
expressed and are realized by zero morph each.		
2. Negative singular imperative: The negative singular imperative form consists of the verb stem, to which the negative morph *aat* is suffixed, followed by clitic *ee* (euphonic suffix). In these forms the imperatives and second person morphemes are also realized by zero morph. Only the negative morpheme is overtly realized by the negative morph *aat* and the clitic *ee.*	V+*aat*+*ee*	*tuungkaatee* 'Don't sleep' *keeTkaate*e 'Don't hear' *ndaTakkaatee* 'Don't walk'
3. Positive plural imperative: It consists of the verb stem and the plural suffix *ungkaL*. Plural suffix *ungkaL* can integrate both the singular number and honorable status. This imperative form can be used to address either a single individual of honorific status or group of individuals.	V+*ungkaL*	*tuungkungkaL* 'Please sleep' *keeLungkaL* 'Please hear' *ndaTangkaL* 'Please walk'
Negative plural imperative: It consists of the verb stem followed by the negative allomorph *aat+iirkaL*.	*V*+aat+iirkaL	*tuungkaatiirkaL* 'Please don't sleep' *keeTkaatiirkaL* 'Please don't hear' *ndaTakaatiirkaL* 'Please

Type	Structure	Example
		don’t walk'

4.5. Summary

The word building mechanism has been outlined to facilitate lexical transfer. Building of major phrases such as noun phrase, verb phrase, adjectival phrase, adverbial phrase and postpositional phrase have been studied with an eye on transfer mechanism. The clause building mechanism by subordination has been thoroughly explored. Different types of dependent and independent clauses have been identified and their structural patterns have been designed to facilitate transfer mechanism. The coordination of phrases and clauses have been dealt under the relevant heads. The architecture of building different types of Tamil sentences and their word order has been studied with the aim of transferring the English sentences into Tamil.

CHAPTER 5

MECHANISM OF TRANSFER OF ENGLISH SENTENCES INTO TAMIL

5.0. Introduction

This chapter is aimed to explicate the transfer mechanism behind rendering English sentences in English into Tamil while preparing a machine translation aid to translate linguistics textbooks in English into Tamil. Of course, the theory of contrastive study is very relevant in this context. Contrastive study is an analysis, which tries to unearth the typological commonalties found between the languages being compared or contrasted. It is needless to mention that there is subtle difference between comparative study and contrastive study. Comparative study is made between two genetically related (cognitive) languages of a particular linguistic family in order to bring out their family affiliation. But contrastive study is undertaken between any two languages in order to bring out the corresponding features between them without bothering about their family affiliation, if there is any. It is a common notion that there is a logic behind it. When two languages are compared expecting the commonalties, it is quite natural that the two sister languages will share common properties as they have originated from a common source (proto language). But in one sense, it is illogical and unwise to expect similar linguistic traits between two languages that are believed to have been originated from different sources. Chomsky's insightful assumption that there are linguistic universals exists among languages leads us to expect shared features between two unrelated languages. Contrastive analysis indirectly helps to frame the theory of linguistic universals, although the contrastive study has basically been made for language teaching purpose. However the contrastive study yields many a fruit in the domain of translation too.

Translation is one of the areas studied elaborately by linguists and translators. Traditionally translation was considered as the process of replacement of a text written in a source language by a text written in a target language, the objective being a maximum equivalence of meaning. But in the present day situation, translation is the process of transfer of message expressed in a source language into a message expressed in a target

language, with the maximization of the equivalence of one or several levels of content of the message. It is hoped here that the correlation of the grammatical structures of English and Tamil throw some light for the purpose of machine translation.

In order to prepare a Machine Translation Aid (MTA) for translating linguistic texts in English into Tamil, we need to know the common and contrasting features of English and Tamil. The study which covers up both the aspects of commonness and contrasting feature are referred here as correlative study. The correlative study has to be made at least from the point of view of lexicon and constituent structure. The correlative study of the vocabulary (lexicon) of both the languages, though crucial for our purpose, is not dealt here. The problem has been tackled in the English-Tamil bilingual dictionary and Tamil generation dictionary, the architecture of them is discussed in chapter 7. Here we are going to concentrate on the constituent structure of the two languages focusing our attention on Syntax. Inflectional morphology is taken care of by analysis and generation dictionaries whose architecture too is discussed in chapter 7. The transfer of English into Tamil has been dealt under the following heads:

1. Transfer of words
2. Transfer of phrases
3. Transfer of clauses
4. Transfer of sentences

5.1. Transfer of words

The words of the source language that are derived, inflected and uninflected have to be transferred into Tamil. The information given by the English analysis dictionary is transferred into Tamil by using Tamil analysis and generation of dictionaries.

5.2. Transfer of phrase

The transfer processes of the following phrases have been dealt here.

1. Transfer of NP
2. Transfer of VP
3. Transfer of PP
4. Transfer of Adj. P
5. Transfer of Adv. P

5.2.1. Transfer of noun phrases

English sentences show that an NP can be built by the rule given below:

NP ↔ Pre-det + Det + Ord + Quant + Adj P + Class + N

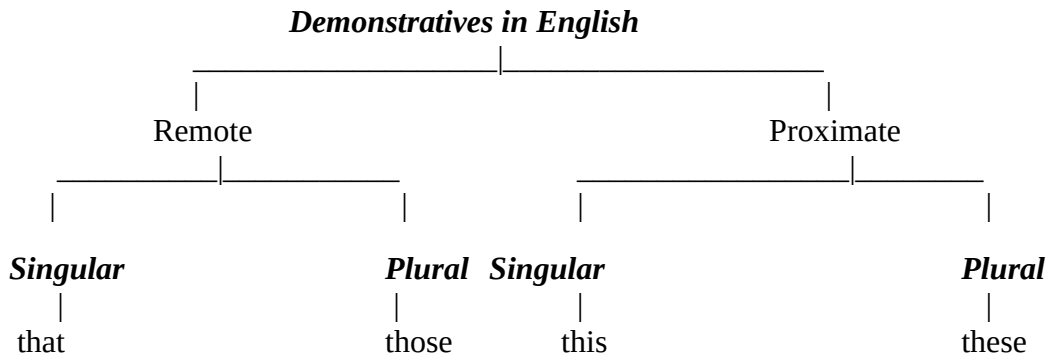
An NP in Tamil can be built by the following rule:

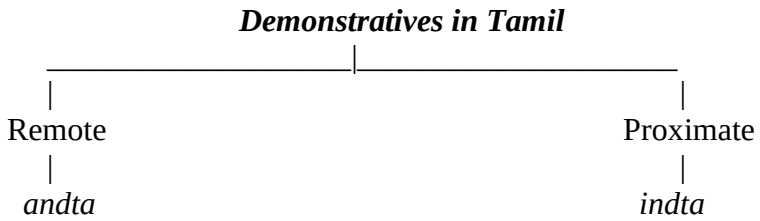
NP ↔Class + Gen P + Qrd/Quant + Dem + Adj + N

The word order of the constituents in NP in Tamil is not fixed as in the case of English.

5.2.1.1. Transfer of demonstratives

Demonstratives in English and Tamil can be distinguished into two types in terms of proximity and remoteness. In English they can be further distinguished in terms of number. The following tree diagrams will illustrate the point:





The following table gives the correlative features of English and Tamil demonstratives:

English	*Tamil*
This	*indta* *itu*
That	*andta* *atu*
These	*indta* *ivai*
Those	*andta* *avai*

The following correlative features of determiners in English and Tamil have to be noted down while transferring NP in English into Tamil.

1. English have articles which can be differentiated into definite and indefinite articles whereas Tamil has no article which can be distinguished into definite or indefinite.
2. It is sometimes possible in Tamil to make use of demonstratives for the definite article *the*.
3. English recognizes singular versus plural distinction under remote and proximate demonstratives whereas Tamil does not make such distinction.
4. English makes use of demonstratives as pronominals in certain places whereas Tamil does not make use of demonstratives as pronominals.

5.2.1.2. Transfer of quantifiers

The following points have to be noted down while transferring the quantifier system of English into Tamil.

1. The aggregates (*all, both*, etc.), fractionals (*half, one-third, two-third*, etc.) and multiples (ex. *twice, three times, four times,* etc.) come before determiners in English and so they are called pre determiners. But in Tamil, the aggregates (*ellaa* 'all', etc), fractionals (*paati* 'half', *muunRil onRu* 'one third', *muunRil iraNTu* 'two third', etc.) and multiplicatives (ex. *iraNTu maTangku* 'two times', *muunRu maTangku* 'three times', etc) do not precede the demonstratives (except in certain cases where it may be due to stylistic variation).
2. In English the prepositions either optionally or obligatorily links the head noun with certain set of quantifiers. Because of this reason fractionals and multiples in English occur before determiners, whereas in Tamil fractionals and multiples follow the determiners. The following examples will illustrate this point.

English	**Tamil**
all those girls	*andta ellaa ciRumikaLum*
all those things	*andta ella poruTkaLum*

two thirds of this portion	*Itil muunRil iraNTu pangku*
double the amount	*iraNTu maTangku tokai*
half of the crowd	*andta paati kuuTTam*
three fourths (of the) share	*andta mukkaal pakuti*

3. In Tamil the clitic *um* has to be added after the noun to bring in the aggregate meaning.

5.2.1.3. Transfer of genitive

Genitive observes the arrangement of relative clause with regard to their head; a considerable number of genitive constructions in contemporary English do, follow their head.

the lap of her sister.

her sister's lap.

If genitive, however, are proper nouns, particularly single names, they often precede.

John's house.

Yet even single names are often postposed.

house of John.

The current status of the genitive in English reflects a change form OV order to VO order.

While the favoured order for genitives has been shifted, adjectives still predominantly precede the modified noun.

large blue eyes.

Only when they are in turn modified do descriptive adjectives regularly follow their head.

They rested on a rock conveniently low.

Limiting adjectives – articles and demonstratives – also stand before nouns, as do numerals; they usually precede descriptive adjectives.

I could not hear him at that distance.

I haven't sent the two persons.

I jumped over the first of the six benches.

Parallel to the order of limiting adjectives is that of multiplying numeral combination with nouns representing higher entities: millions, thousands, hundreds, tens in the order of higher to lower (preceded by the simple numerals).

Four thousand two hundred and seven.

As with preposed descriptive adjectives, genitives, and relative clauses, preposed limiting adjectives and the cited numerals combinations reflect OV structure. This is the most conservative of the English modifying patterns. In maintaining it as a relic pattern, English provides evidence for the OV structure which posited for its ancestor language.

Yet English nominal phrases for the most part observe the canonical order of SVO languages, maintaining form early stages OV order only with adjectives and numeral constructions other than the teens.

5.2.2. Transfer of verb phrase

In SVO languages, like English, expressions of verbal modification should be placed before verbs, in accordance with their VO structure. Like nominal modification, verbal modification avoids disruption of the VO constituent. The presence of separate verb like elements called auxiliaries constitutes one of the characteristics of SVO languages and of English. The expressions for declarative utterances simply observe the normal word order.

This speech caused a remarkable sensation among the party.

It is generally believed that Tamil lacks of VP constituency. So generally Tamil sentences are given flat structures, instead of placing VP at a higher position in a hierarchical strucure. Tamil is an SOV language in which ‘S’ and ‘O’ can be shuffled. Tamil is not strictly a configurational language. The direct and indirect objects can be identified by case suffixes.

Many interesting points will be revealed for the purpose of transferring English language structure into Tamil, if we look at the correlating features of the two languages from the point of view of their typological characteristics as SVO and SOV languages respectively. Syntactically, English and Tamil are perhaps most saliently different in the basic word order of verb, subject, and object in simple declarative clauses. Tamil is an SOV language, meaning that the verb tends to come at the end of basic clauses. Tamil being SOV language has postpositions. Tamil is a typical (S)OV language in which the verb occurs at the final position of a sentence. Word order in the sentence is relatively

free, as long as the sentence ends with a main verb.

5.2.2.1. Transfer of complex verbal forms denoting tense, and aspect mood

Both English and Tamil employ the complex process of combining inflection and compounding in denoting tense, aspect, and mood. We can find correspondences between English and Tamil for the purpose of translating one from the other, though the correspondences are not always perfect; there are proper equivalents and improper and defective equivalents. The tense, aspect, and mood systems of English and Tamil operate differently and finding equivalents is a tough task. But for the purpose of MT, we compromise with certain peripheral differences between them and try to capture the core of the systems with the view in mind that what is conveyed in English can be transferred to Tamil without many distortions as our idea is to translate linguistic text in English into Tamil. The emotive and attitudinal senses conveyed by the auxiliary system will not play a vital part in expressing linguistic concepts. So we ignore the emotive and attitudinal sense and try to capture a core aspectual and model system. That is why we have ignored certain auxiliaries, which are used in Tamil to denote certain attitudinal and non-attitudinal senses. With this aim in mind, the aspectual and modals systems in both languages have been correlated for the purpose of preparing MTA. The following table correlates TAM system of English with that of Tamil.

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
V1 + past tense ex. He wrote.	Past tense	***V + past tense + PNG*** ex. *avan ezhutinaan*
V + present tense ex.He writes	Present Tense	***V + present tense + PNG*** ex. *avan ezhutukiraan*
has / have + V3 ex. He has written. I have written	Present perfect aspect	V + past participle + *iru* + present + PNG ex. *avan ezhutiyirukkiRaan*. *ndaan ezhutiyirukkiReen.*
had + V3 ex. He had written	Past perfect aspect	V + past participle + *iru* + past + PNG ex. *avan ezhutiyirundtaan*

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
'Be' verb + present tense + V-ing ex. He is writing.	Present progressive aspect	V + past participle + *koNTiru* + present – PNG ex. *avan ezhutik koNTiukiRaan*.
'Be' verb + past tense + V-ing ex. He was writing.	Past progressive aspect	V + past participle + *koNTiru* – past – PNG ex. *avan ezhutik koNTirundtaan*
will/shall be verb future tense + V-ing ex. He will be writing a letter.	Future progressive aspect	V + past participle + *koNTiru* + future + PNG ex. *avan kaTitam ezhutik koNTiruppaan*
1. can + V1 ex. He can speak English but he can't write it very well.	Ability = be able to = be capable of = know how to	V + infinitive + *muTiyum* / iyalum ex. *avanaal aangkilam peeca muTiyum, aanaal ezhuta muTiyaatu.*
1. Can + V1 Can I smoke in here ('Am I allowed to smoke here?).	I. Permission = be allowed to = be permitted to ('can' is less formal than 'may' in this sense)	1. V-*al* + *aam* + *aa* *ndaan pukai piTikkalaamaa?*
1. can + V1 ex. Anybody can make mistakes. 2. can + be + V3 The road can be	I. Possibility = it is possible but / to theoretical possibility may = factual possibility	1. V-*al* + *aam* ex. *yaarum tavaRu ceyyalam* 2. V + infinitive + *paTal* + *aam* *caalai aTaikkppaTalaam.*

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
blocked.		
Could + V1 ex. I never could play the chess.	Ability	V + infinitive + *muTiyum* / *iyalum* ex. *enaal caturangkam aaTa muTiyavillai.*
Could + V1 Could I smoke in here?	II. Permission	V-*al* + *aam* + *aa* *ndaan pukai piTikkalaamaa?*
1. could be + C ex. That could be my train. 2. could be + V3 The road could be blocked.	II. Possibility (theoretical or factual, cf: might) “	1.*irukkkal* + *aam* ex. *atu ennuTaiya toTarvaNTiyaay irukkalaam.* 2a. V+infinitive + *paTTu* + *irukkal* + *aam* *caalai aTaikkap paTTu irukkalaam* 2b. V + infinitive + *paTTu* + *irukka* + *kuuTum* *caalai aTaikkap paTTirukkakkuuTum*
may + V1 He might leave tomorrow.	Future time with modal auxiliaries. In many contexts, modal auxiliaries have inherent future reference, both in their present tense and past form.	V-*al*+*aam* *avan ndaalai pookalaam*.
1. may + V1 You may borrow car if you like. 2. may not + V1	III. Permission = be allowed to = be permitted to In this sense *may* is more	1.V-*al* + *aam* *ndii ennuTaiya kaarai kaTanaakap peRalaam.* 2.V + infinitive + *maaTTu*+ PNG

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
ex. You may not borrow my car. (=You are not allowed to borrow my car.)	formal than *can*. Instead of *may not* or *mayn't mustn't* is often used in the negative to express prohibition	ex. *ndii ennuTaiya kaarai kaTanaakap peRamaaTTaay.*
1. may + V1 He may never succeed ('It is possible that he will never succeed') 2. may + be + V3 ex. The road may be blocked 'It is possible that the road may be blocked'.	III. Possibility = it is possible that /to May = factual possibility (cf: can = theoretical possibility)	1a.V-*al* + *aam* (for positive meaning) 1b. V + infinitive + *maaTTu* + PNG *avan veRRi peRamaaTTaan* 2 V + infinitive + *paTal* + *aam* ex. *caalai aTaikkappaTalaam*.
might + V1 He might leave tomorrow.	Future time with modal auxiliaries. In many contexts, modal auxiliaries have inherent future reference, both in their present tense and past form.	V-*al* + *aam* *avan ndaalai pookalaam*.
Might..? Might I smoke here?	IV. Permission	V-*al* + *aam* + *aa* *ndaan pukai piTikkalaamaa?*
might + V1 He might succeed.	Possibility	V-*al* + *aam* *avan veRRi peRalaam.*
Shall + V1 He shall get the	II. Willingness on the part of the speaker in 2nd person	V-*al* + *aam* *avan paNam peRalaam.*

TAM forms in English with examples	Meaning	Equivalent TAM forms in Tamil with examples
money. You shall do exactly as you wish.	and 3rd person ('weak volition') Restricted use.	*ndii virumpuvatu pool ceyyalaam.*
Shall + V1 ex. We shall let you know our decision. We shall overcome. 1b. shan't + V1 ex. It shan't be long for me to meet the minister.	I. Intention on the part of the speaker only in 1st person ('intermediate volition').	1a. V + future tense + PNG ex. *ndaangkaL ungkaLiTam engkaL tiirmaanattait terivippoom.* 1b. *aakaatu* ex. *enakku mandtiriyai paarkka ndiiNTa ndeeram aakaatu*
Shall + V1 You shall do as I say. He shall be punished. The vendor shall maintain the equipment in good repair.	I.a. Insistence ('strong volition'). Restricted use. b. Legal and quasi-legal.	V-*al+aam* *ndaan collukiRa paTi ceyyalaam.* *avan taNTikkappaTalaam.* *teru viyaapaari tannuTaiya karuviyai ceppam ceytu vaittirukkalaam.*
should + V1 ex. You should do as he says. They should be home by now.	I. Obligation and logical necessity (= ought to)	V + infinitive + *veeNTum* ex. *ndii avan colvatu pool ceyya veeNTum.* *avarkaL ippootu viiTTil irukka veeNTum.*

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
will/shall + V1 ex.He will write. I shall write.	Future Tense	V + future + PNG ex. *avan ezhutuvaan.* *ndaan ezhutuveen*.
will + V1 I'll write as soon as I can. Will you have another cup of tea?	I. Willingness ('weak volition') unstressed, especially 2nd person. 'Down toners' like please may be used to soften the tone in requests.	V + future tense + PNG *epootu muTikiRatoo apootu ndaan ezhutuveen.* *innoru kooppai teeniir kuTikkiRaayaa?*
will + V1 I'll write as soon as I can. We won't stay longer than two hours.	II. Intention (intermediate volition). Usually contracted *'ll*; mainly 1st person.	V+future tense+PNG *muTiyumpootu uTanee ezhutuveen.* *ndaangkaL iraNTu maNi ndeerattiRku meel tangka maaTToom*
will + V1 He 'will do it, whatever you say ('He insists on doing it...') (cf He 'shall do it, whatever you say = 'I insist on his doing it')	II. Insistence ('strong volition' = insist on). Stressed, hence on 'll contradiction. An uncommon meaning.	V + future tense + PNG *ndiingkaL colvatai avan ceyvaan.*
Would...? ex. Would you	III. Willingness ('weak volition')	V + future tense + PNG + *aa* *ndii ennai mannippaayaa?*

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
excuse me.		
would + V1 ex. It's you own fault; you 'would take the baby with you.	III. Insistence ('strong volition')	V + past participle form + iru + infinitive + veeNTum ex. *atu un tavaRu. ndii kuzhandtaiyai unnuTan eTuttuc cenRirukka veeNTum*
1. must ex. You must be back by 10 o'clock. 2. had to ex. Yesterday you had to be back by 10 o'clock. ex. Yesterday you said you had to / must be back by 10 o'clock.	II. Obligation or compulsion in the present tense (= be obliged to, have to); except in reported speech. only *had to* (not must) is used in the past. In the negative sentence needn't, don't have to, not be obliged to are used (but not must not, mustn't which = 'not be allowed to').	1.V+infinitive+veeNTum ex.*ndii pattu maNikku tirumpa veeNTum.* 2.V+past participle +iru+infinitive+veeNTum ex.*ndeeRRu ndii condaay pattu maNikku ndaan tirumpiyirukka veeNTum enRu.* .
will, must, should + V1 ex. The game will/must/should be finished by now.	[Prediction of the similar meanings of other expressions for logical necessity and habitual present. The contracted form 'll is common]. Specific prediction.	V + infinitive + *veeNTum* ex. *viLaiyaaTTu inndeeram muTindtirukka veeNTum*.
will + V1, V1 ex. Oil will float / floats on water.	Timeless Prediction	V + future + PNG ex. *eNNai taNNiiril mitakkum*.

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
will, 'll He'll (always) talk for hours if you give him the chance.	Habitual prediction	V + future +PNG *avanukkuc candtarppam koTuttaal avan (eppozhutum) maNikkaNakkaakap peecuvaan.*
1. must, has to ex. There must / has to be a mistake. (must is not used in sentences with negative or interrogative meanings, *can* being used instead. 2.cannot ex. There cannot be a mistake. 3.mustn't (Must can occur superficially interrogative but answer-assuming sentence.) ex. Mustn't there be another reason for his behaviour.	Logical necessity	1. *irundirukka + veeNTum* ex. *tavaRu irundtirukka veeNTum.* 2.*irudndirukka + muTiyaatu* ex. *tavaRu irundtirukka muTiyaatu.* 3.*irundirukka + veeNTaam* ex. *avanuTaiya parimaaRRattiRku veeRu kaaraNam irundirukka veeNTaam.*

TAM forms in English with examples	**Meaning**	**Equivalent TAM forms in Tamil with examples**
ought to + V1 You ought to start at once. They ought to be here by now.	Obligation and logical necesssity	V + infinitive + *veeNTum* *ndii uTanee puRappaTa veeNTum*. *avarkaL ipootu ingkee irukka veeNTum.*
Used to + V1 He used to fish for hours. He used to be an excellent cricketer..	A state of habit that existed in the past but has ceased. (cf: *would*, and *formerly* or *once* + past)	V-*atu* + *vazhakkam* + *aay* + *iru* + past + PNG *maNikkaNakkil miin piTippatu avan vazhakkamaay irundtatu.* *avan oru arumaiyaana kirikket aaTTakaaranaaka irundtaan*.

The following points have to be noted while transferring TAM system of English into Tamil.

1. Both English and Tamil make use of inflection as well as compounding (i.e. combining main verbs with the auxiliary verbs) to express TAM.
2. The important point to be noted from the point of view of word order is that auxiliary verbs in English precede the main verb in English, whereas in Tamil they follow the main verb.
3. In English auxiliary verbs are inflected for tense, person and number; whereas in Tamil they are inflected for tense, person, number and gender.
4. Both English and Tamil undergo auxiliary reduction.
5. Identical auxiliary verbs in complex constructions get deleted both in English and Tamil.
6. Auxiliary verb occurs in a sequence to denote tense, mood, aspect, voice etc. in both English and Tamil. The modal auxiliary verb in English never occurs after a primary auxiliary verb in English, whereas, in Tamil primary auxiliary verb never occur after a modal auxiliary verb (with the exception of few modal auxiliary verbs).
7. Both Tamil and English express perfective and progressive sense by auxiliary verbs.

But Tamil makes use of this device to express the completive and reflexive sense too.

8. In English, interrogative sentences are derived from their respective affirmative sentences by shifting the relevant auxiliary verbs to the initial position.

The following table shows the correlative features of auxiliary system in English and Tamil for the sake of transfer.

Auxiliary system in English	**Auxiliary system in Tamil**
The auxiliary verbs are used to add auxiliary meaning to the main verb	In Tamil too, a lot of auxiliary verbs are used to add auxiliary meaning to the main verb.
The auxiliary verb precedes the main verb.	The auxiliary verb follows the main verb.
Primary auxiliary verbs are inflected for tense, person and number.	Primary auxiliary verbs are inflected for tense, person, and gender.
The modal auxiliary verbs are inflected for negation.	Tamil too, the modal auxiliary verbs are inflected for negation.
This is (written in next column) not found in English.	The main verbs in the auxiliary verb constructions occur in the form of verbal participles, infinitives or verbal nouns
This is (written in next column) not found in English)	Any one of the identical auxiliary verbs is deleted in the formation of compound sentences.
Auxiliary verb reduction is possible.	Auxiliary verb reduction is possible in Tamil too.
Lexical insertion between the main verb and auxiliary verb (with the exception of a few modal auxiliary verbs) is possible.	Lexical insertion mentioned in the case of English is not possible in Tamil.
Auxiliary verb occurs in a sequence to denote a different grammatical meaning.	This is the case with Tamil too
A modal auxiliary verb never occurs after a primary verb.	A primary auxiliary verb never occurs after a modal auxiliary verb.
A statement can be converted into a yes-	This is not possible in Tamil.

Auxiliary system in English	Auxiliary system in Tamil
or-no question by shifting the auxiliary verb to the sentence initial position	
Auxiliary verbs occur in tag questions, but the main verbs do not occur in tag questions.	This is the case with Tamil too.
The *n't* that is the contracted form of *not* is cliticized onto the preceding auxiliary verbs but never onto a preceding main verb.	This is not found in Tamil.
The supportive *do* appears before a main verb in certain environments, but never before an auxiliary verb.	This is not found in Tamil.
The *all* (quantifier) which follows the auxiliary verb is semantically associated with the subject of the sentence.	This is not found in Tamil.

5.2.2.2. Transfer of verb patterns

The following table illustrates the transfer of verb pattern forms in English into Tamil.

Verb patterns in English	Parallel patterns in Tamil
Verb pattern 1 NP + BE + NP This is a book	NP + NP *atu our puttakam*
NP + BE + PN It's me	NP + NP *atu ndaan /atu ennuTaiyatu*

Verb patterns in English	**Parallel patterns in Tamil**
NP + BE + Possessive P That's mine	NP + Possessive Pronoun-*uTaiyatu* atu ennuTaiyatu
Interrogative + BE + NP Who is that?	NP + interrogative pronoun *atu yaar*?
NP + BE + Adj. She is clever	NP + Adj-pronominalizer *avaL azhakaanavaL*
NP + BE + Adj. P The statue will be life size	NP + Adj-pronominalizer *andta cilai mikapp periyatu*
NP + BE + PP She is in good health	NP + NP-ooTu + iru *avaL ndalla aarookkiyattooTu irukkiRaaL*
NP + BE + Adv She is here	NP + Adv + iru *avaL ingke irukkiRaaL*
There + BE + NP There was a large crowd	angkee + NP + iru angkee perum kuuTTamaaka irundtatu
There + BE + NP + PP There are three windows in this room	PP + NP + iru *indta aRaiyil muunRu jannalkaL irukkinRana*.
It + BE + Adj. / NP + to-infinitive (phrase) It is so nice to sit here with you.	atu-clause + Adj + iru *unnuTan uTkaarndtu iruppatu rompa ndanRaaka irukkiRatu*
How + Adj. / NP + (it + BE) to-infinitive phrase How nice it is to sit here with you	atu-clause + evvaLavu + Adj + iru *unnuTan uTkaarndtu iruppatu evvaLavu ndanRaaka irukkiRatu*
What + Adj. / NP + (it + BE) to-infinitive clause What a pity it is to waste them.	atu-clause + evvaLavu + Adj + iru *ndeerattai viiNaakkuvatu evvaLavu moocamaaka irukkiRatu*

Verb patterns in English	**Parallel patterns in Tamil**
It + BE + Adj. / NP + gerundial clause It is so nice sitting here with you.	atu-clause + Adj + iru *unnuTan uTkaarndtu iruppatu ndanRaaka irukkiRatu*
NP + BE + that-clause The trouble is (that) all the shops are shut.	enpatu-clause + Adj + iru *ellaa kaTaikaLum muuTappaTTirukkinRana enpatu cikkalaaka irukkiRatu*
It + BE + NP / Adj. + that-clause It was a pity (that) you couldn't come.	enpatu-clause + Adj + iru *unnaal vara iyalavillai enpatu varuttattiRkuriyataaka irundatu.*
NP + BE + to-infinitive clause This house is to let	NP + infinitive-clause + iru indta viiTu vaaTakaikku viTa irukkiRatu.
It + BE + Adj. / NP + for + N/pronoun + to-infinitive (phrase) It was hard for him to live on this small pension.	atu-clause + Adj + iru *indta cinna ciRaiyil vaazhvatu* *kaTinamaaka irundtatu*
Verb pattern 2 NP + Vi The sun is shining	NP + Vi *cuuriyan pirakaacikkiRatu*
There + Vi + NP There followed a long period of peace and prosperity.	NP + Vi *amaitiyaana vaLamaana kaalam toTarndtatu*
It + Vi + whether-clause It does not matter whether we start now or latter.	enpatu-clause + Vi *ippozhutaa allatu pinnaraa ndaam toTangakvirukkiRoom enpatu viSayam alla.*

Verb patterns in English	**Parallel patterns in Tamil**
It + Vi + to-infinitive Clause It only remains to wish you both happiness.	Infinitive clause + Vi ndiingkaL iruvarum makizhcciyaaka irukka vaazhtta irukkiRatu
It + Vi + that-clause It seemed that the day would never end.	*enRu*-clause + Vi *ndaaL muTivuRaatu enRu toonRukiRatu*
NP + Vi + for + PP [Adv adjunct] We walked for five miles	NP + NP [Adv adjunct] + Vi *ndaam aindtu mailkaL ndaTandoom*
NP + Vi + Adv. Adjunct My hat blew off	NP + Vi ennuTaiya toppi paRandtu viTTatu.
NP + Vi +Adj. The leaves are turning brown.	NP + Adj + Vi *ilaikaL pazhuppu ndiRattil maaRukinRana*.
NP + Vi + Adjectival past participle You look tired.	NP + Adj + Vi *ndii kaLaippaakat toonRukiRaay.*
NP + Vi + NP He died a millionaire	NP + Adj + Vi avan oru laTcaatipatiyaaka iRandtaan
NP + Vi + Reflexive pronoun You are not looking yourself today	NP + Pronoun-aaka +Vi *ndii inRu ndiiyaakat toonRavillai.*
NP + Vi + V-ing + infinitive-clause The children came running to meet us.	NP + infinitive-clause + V-past participle + Vi *kuzhandaikaL ndammaic candtikka ooTi vandtana.*

Verb patterns in English	**Parallel patterns in Tamil**
Verb pattern 3: NP + Vi + preposition + NP (NP = noun, pronoun) You can rely on me	NP + NP + postposition + Vi NP = noun, pronoun *ndii en miitu ndammpikkai vaikkalaam*
NP + Vi + preposition + NP + to-Infinitive Clause They advertised for a young girl to look after the children.	NP + infinitive-clause + NP + postposition + Vi *avarkaL kuzhandtaikaLai kavanikka oru iLamaiyaana peNNiRku veeNTi viLamparam ceytaarkaL.*
NP + Vi + (preposition + (it))+ that-clause We will see (to it) that she gets home early. They decided (on) who should act as Sita.	Infinitive-clause + NP + Vi *avaL kaalam taazhttaamal viiTTiRku vara ndaam eeRpaaTu ceyvoom.* Infinitive-clause + NP + Vi *avarkaL muTivueTuttu viTTaarkaL yaar seettaavaaka ndaTippatu enRu.*
Verb pattern 4 NP + Vi + to-infinitive clause (of purpose, outcome, or result) He ran to chase the thief.	NP + infinitive clause + Vi *avan tiruTanait turatta ooTinaan*.
NP + Vi + to-infinitive clause (may be equivalent to a coordinated or subordinated clause) He turned to see the sun setting.	NP + infinitive-clause + Vi *avan cuuriyan maRaivataip paarkkat tirumpinaan.*

Verb patterns in English	**Parallel patterns in Tamil**
NP + Vi + to-Infinitive clause (infinitive adjunct is used after some verbs) She agreed to sing a song.	NP + infinitive-clause + Vi *avaL oru paaTTup paaTa cammatittaaL*
NP + seem/appear + (to be) + Adj. /NP This seems (to be) light thing NP + seem/appear + (to be) + Adj. /NP She seemed (to be) unable to enjoy it.	NP + Adj/NP-aaka + toonRu/teri a*tu ileecaana poruLaakat toonRukiRatu* enRu-clause + toonRu/ teri *avaL atai iracikka iyalaatu enRu toonRukiRatu.*
NP + seem/appear/happen/chance + to-infinitive clause The baby seems to be asleep.	atu-clause + poola + toonRu, teri, etc. *kuzhandtai uRangkuvatu-poolat toonRukiRatu*
NP + be + to-infinitive Clause You are to break the news	NP + infinitive clause + veeNTum *ndii anda ceytiyai veLippaTutta veeNTum*
Verb pattern 5 NP + Anomalous finites + bare infinitives You may leave now.	NP + infinitive clause+aam *ndii ippootu pookalaam*
Verb pattern 6 NP + Vt + NP (passivisation is possible) Nobody answered my question.	NP + NP-*kku* + Vt *yaarum ennuTaiya keeLvikku viTai aLikkavillai*

Verb patterns in English	**Parallel patterns in Tamil**
NP + Vt + NP (passivisation is not possible) She laughed a merry laugh.	NP + NP + Vt *avaL inimaiyaana cirippu cirittaaL*
NP + Vt + Gerundial clause (not replaceable by to-infinitive) She enjoys playing tennis.	NP + infinitive-clause + Vt *avaL Tennis viLaiyaaTa virumpukiRaaL.*
NP + Vt + Gerundial clause (replaceable by to-infinitive clause) The children love playing on the sand.	NP + *atu*-clause-*ai* + Vt *kuzhandtaikaL maNalil viLaiyaaTuvatai virumpukinRana*
NP + need/want/bare + Gerund (with passive meaning) The garden needs watering.	atu-clause + NP *tooTTattil taNNiir viTuvatu avaciyam.*
Verb pattern 7 NP + Vt + (not) + to-infinitive clause I prefer not to start early.	atu-clause-*ai* + Vt *munnaree toTangkuvatai ndaan virumpavillai*
NP + have/ought + (not) + to-infinitive clause You ought not to complain.	NP + infinitive-clause + *kuuTaatu* *ndii kuRaikuuRak kuuTaatu*
Verb pattern 8 NP + Vt + interrogative pronoun + to-infinitive clause I don't know who to go for advice. She could not decide what to do next.	NP + interrogative pronoun-*iTam* + *atu*-clause + *enRu* + Vt *ndaan yaariTam aRivuraikkaaka poovatu enRu teriyavillai.* NP + interrogative pronoun-*iTam* + *atu*-clause + *enRu* + Vt *avaLukku aTuttu enna ceyvatu enRu muTivu ceya iyalavillai*

Verb patterns in English	**Parallel patterns in Tamil**
NP + Vt + interrogative Adv. + to-infinitive Clause Have you settled where to go for your holidays?	Interrogative Adv + V-*atu* + *enRu* + NP + Vt *un viTumuRai ndaaTkaLil engkee poovatu enRu ndii tiirmaanittu viTTaayaa?*
NP + Vt + whether + to-infinitive Clause She didn't know whether to cry or to laugh.	*atu*-clause-*aa enRu* + NP-*ukku* + Vt *taan cirippataa azhuvataa enRu avaLukkut teriyavillai*
Verb pattern 9 NP + Vt + that-clause He doesn't believe that my intentions are serious.	atu-clause + enRu + NP + Vt *ennuTaiya viruppangkaL mukkiyattuvam vaayndtatu enRu avan ndampavillai*
Verb pattern 10 NP + Vt + wh-clause I don't know who she is. I don't know who is she.	[NP + interrogative word + (V)]S + *enRu* + NP-ukku + Vt *yaar avaL enRu enakkut teriyaatu* *avaL yaar enRu enakkut teriyaatu*
NP + Vt + whether-clause She asked whether I put sugar in my tea.	S-aa + *enRu* + NP + Vt ndaan teendiiril carkarai pooTeenaa enRu avaL keeTTaaL
Verb pattern 11 NP + Vt + NP + that-clause He warned us that the roads were covered with snow. .	S + enRi + NP + NP-*ai* + Vt *caalaikaL panikkaTTikaLaal muuTappaTTuLLana enRu avan engkaLai eccarittaan.*
Verb pattern 12 NP + Vt + NP [IO] + NP [O] The indirect object can be converted into *to* + NP He handed her the letter (= He handed the letter to her)	NP + NP-*iTam* + NP + Vt *avan avaLiTam kaTitaittai oppaTaittaan*

Verb patterns in English	**Parallel patterns in Tamil**
NP + Vt + NP [IO] + NP [O] The indirect object can be converted into for + NP Are you going to buy me some? (= Are you going to buy some for me?)	NP + NP-aaka + NP + Vt *ndii enakku-aakak konjcam vaangkap pookiRaayaa?*
NP + Vt + NP + NP He struck the door a heavy blow.	NP + NP-ukku + NP + Vt *avan katavukku oru veekamaana taTTu koTuttaan*
Verb pattern 13 NP + Vt + NP [O] + to + NP She read the letter to all her friends.	NP + NP-*iTam* + NP-*ai* + Vt *avaL tannuTaiya ellaa cineekitikaLiTamum andta kaTitattaip paTittuk kaaTTinaaL.*
NP + Vt + NP [O] + for + NP I have bought some chocolate for her.	NP + NP-aaka + NP + Vt *ndaan avaLukkaaka konjam caakleeTT vaangkiyirukkiReen.*
NP + Vt + NP [O] + PP We congratulated him on his success. Thank you for your kind help.	NP + NP-aaka + NP-ai + Vt. *ndaangkaL avan veRRikkaaka avanaip paaraaTTinoom.* *ungkaLuTaiya anpaana utavikku ndanRi*
NP + Vt + PP + NP [O] I explained to him the impossibility of granting his request.	NP + NP-ai + NP-iTam + Vt *avanuTaiya veeNTukooLukku utavipuriya iyalaamaiyai ndaan avaniTam viLakkineen*
NP + Vt + PP + to-infinitive + that clause I must leave it to your own judgment to decide whether you should offer your resignation.	enRu clause + atu-clause-ai + NP + NP-ukku + Vt ndii unnuTaiya iraajinaamaavai koTukkaveeNTumaa enRu muTivu ceyvatai ndaan unnuTaiya tiirmaanattiRkee viTTuviTa veeNTum

Verb patterns in English	**Parallel patterns in Tamil**
Verb pattern 15 NP + Vt + NP [O] + Adv. P/PP Please put the milk in the refrigerator.	NP + NP-ai + NP-il/ Adv + Vt tayavu ceytu paalai kuLircaatanap peTTiyil vai
NP + Vt + NP [O]+ Adverbial particle Put your shoes on.	NP + NP-ai + VtT *unnuTaiya kaalaNikaLai aNi*
Verb pattern 16 NP + Vt + NP [O]+ to-infinitive clause He brought his brother to see me.	NP + NP-ai + infinitive-clause + Vt *avan tannuTaiya cakootaranai ennaip paarkka koNTu vandtaan.*
NP + Vt + NP [O] + as/like/for + NP They have hired a fool as our football coach.	NP + NP-ai + NP-aaka + Vt *avarkaL oru muTTaaLai engkaLuTaiya kaal pandtaaTTa payiRciyaaLaraaka vaaTakaikku eTuttirundtaarkaL.*
Verb pattern 17 NP + Vt + NP [O] + (not) + to-infinitive clause (can be passivized) I warn you not to believe a word he says.	[…V-infinitive + veeNTaam]S + enRu + NP + NP-ai + Vt *avan kuuRuvatil oru collaikkuuTa ndampa veeNTaam enRu ndaan unnai eccarikkiReen.*
NP + Vt + NP + (not) + to-infinitive clause (cannot be passivized) He doesn't want anyone to know that she is going away.	*atu*-clause-*ai* + NP + Vt *avaL veLiyeeRikkoNTirukkiRaaL enRu yaarum aRivatai avan virumpavillai.*

Verb patterns in English	**Parallel patterns in Tamil**
Verb pattern 18 NP + Vt + NP + infinitive clause (verbs indicate physical perception) Did any one hear John leave the house? Did you see anyone go out?	*atu*-clause-ai + NP + Vt *jaaN viiTTai viTTu veLiyeeRiyatai yaaraavatu paarttiirkaLaa?* *ndii yaaraavatu veliyee poonataip paarttaayaa?*
NP + Vt + NP + infinitive clause (verbs do not indicate physical perception) What makes you think so?	NP + NP-ai + infinitive-clause + Vt *etu unnai avvaaRu eNNat tuuNTiyatu?*
NP + have + NP + infinitive clause We have computers to do our work.	*atu*-clause +*ukku* +....+Vt *ndaangkal engkaL veelaiyai ceyvataRku kaNini vaittuirukkiroom.*
Verb pattern 19 NP + Vt + NP + ing-clause (verbs indicate physical perception) He felt his heart throbbing.	NP + atu-clause-ai + Vt avan tan itayam aTippatai uNarndtaan.
NP + Vt + NP + ing-clause (verbs do not indicate the physical perception) I can't have you doing that..	NP+NP-*ai* verbal participle clause +...+Vt *ndaan atai unnai vaittu ceyya iyalaatu*.
NP + Vt + NP + ing-clause (NP = noun, pronoun, possessive) I can't understand him/his leaving so suddenly.	NP + *atu*-clause-*ai* + NP/NP-*aal* + Vt *avan tiTiir enRu veLiyeeRuvatai purindtukoLLa iyalavillai*

Verb patterns in English	**Parallel patterns in Tamil**
Verb pattern 20 NP + Vt + NP + interrogative pronoun or adverb + to-infinitive clause I showed them how to do it.	[interrogative pronoun/Adv + V-*atu*] + *enRu* + NP + NP-*ukku* + Vt *evvaaRu ceyvatu enRu ndaan avarkaLukku kaaTTineen*
NP + Vt + NP + whether + to-infinitive clause Ask her whether to trust him or not.	atu-clause-*aa* + *enRu* + NP + NP-*iTam* + Vt *avanai ndampuvataa veeNTaamaa enRu avaLiTam keeL*
Verb pattern 21 NP + Vt + NP + wh-clause Tell me what your name is? He told me why he had come.	[…wh-word…]*enRu* + NP + NP-*iTam* + Vt *un peyar enna enRu enniTam kuuRu* *avan een vandtaan enRu enniTam connaan*
Verb pattern 22 NP + Vt + NP [O] + Adj. (NP = noun, pronoun, gerund) We painted the ceiling green. The blister on my heal made walking painful.	NP + NP-kku + Noun of quality equivlaent to adjective + Vt *ndaangkaL uTkuuraikku paccai varNam aTittoom* NP + NP-ai + Adj + Vt *en paatattil irunda puN ndaTappatai veetanaikkuriyataay ceykinRatu*
Verb pattern 23 NP + Vt + NP [O] + NP [Object complement] The team has voted me their new captain.	NP + NP-*ai* + NP-*aaka* + Vt *andta kuzhu ennai avarkaLin putiya talaivanaaka teerndteTuttirukkinRatu*
NP + Vt + NP + NP [Subject complement] Jill has made Jack an excellent wife.	NP + NP-*ai* + NP-*aaka* + Vt *jill jaakkiRku oru ndalla manaiviyaaka uruvaakiyirukkiRaaL*

Verb patterns in English	Parallel patterns in Tamil
Verb pattern 24 NP + Vt + NP [O] + Past Participle Phrase NP [O] = noun, pronoun You must get this door painted. You must make yourself respected.	NP + [NP-ai + Infinitive] infinitive-clause + Vt *ndii indta katavai varNam puucac ceyya veeNTum* NP + [NP-*uuku* + V-infinitive] infinitive-clause + Vt *ndii unakku mariyaatai tarac ceyyaveeNTum*
NP + have + NP [O] + Past Participle Phrase NP [O] = noun, pronoun She's had her handbag stolen. The pilot had his plane hijacked.	NP + NP-ai + V-infinitive + Vt *avaL tannuTaiya kaipaiyai tiruTa viTTaaL* *vimaanam ooTTiyee tan vimaanattai kaTattac ceytaar.*
NP + have/get + NP [O] + Past Participle NP [O] = noun, pronoun Please get the machine repaired.	NP + NP-ai + V-infinitive + Vt *tayavuceytu poRiyai pazhutu paarkkac cey*
Verb pattern 25 NP + Vt + NP [O] + (to be) + Adj./NP Most people considered him (to be) innocent. I have always found Jonathan a good friend.	NP + NP-*ai* + NP-*aaka* + Vt *palar avanai ndiraparaatiyaakak karutinaar.* *ndaan joonaatanai oru ndalla ndaNpanaakak kaNTeen.*

5.2.3. Transfer of adjectival phrases

The following points of typological correlation have to be noted while attempting to transfer adjective phrase in English into Tamil.

1. Adjectives precede the nouns which they qualify in Tamil which reflect the characteristic of SOV language. Adjectives precede the nouns they qualify even

though English is an SOV. However, a few numeral adjectives and all predicative adjectives follow the nouns which they qualify. This tendency reflects the transition of sentence structure form SOV to SVO.

2. In English, a few simple adjectives are inflected for degrees of comparison. whereas in Tamil the adjectives are not inflected for degrees of comparison.

3.Adjectives occur in succession as qualifiers of head in both languages.

The following table illustrates the transfer of adjectival patterns in English into Tamil.

Adjectival patterns of English	**Parallel patterns in Tamil**
[… + Adj. + N]NP + V A good boy came	[..Adj +N]NP +V *oru ndalla paiyan vandtaan*
NP + BE + [.. + Adj. + N] NP He is a good boy	NP + [… Adj + N]NP *avan oru ndalla paiyan.*
NP + BE + Adj. She is beautiful	NP + Adj + BE *avaL azhakaay irukkiRaaL.*
NP + BE + Intensifier [Adv] + Adj. She is very beautiful	NP + intensifier + Adj + Adj + BE *avaL mika azhakaay irukkiRaaL.*
It + BE + Adj. + to-infinitive Clause It 's easy to please Jim	NP + atu-clause + Adj + BE *jimmai tirupptipaTuttuvatu eLitaaka irukkiRatu.*
NP + BE + Adj. + to-infinitive Clause Jim is eager to please every one	NP + infinitive clause + Adj + BE *jim ovvoruvaraiyum tiruptipaTutta viruppamaaka irukkiRaan.*
It + BE + Adj. + to- infinitive Clause It is wrong of Jim to leave	NP + *atu*-clause + Adj + BE *jim veLiyeeRuvatu tavaRaaka irukkum*
It + BE+ Adj. + that-Clause It is certain that Jim will win.	*enpatu*- clause + Adj + BE *jim jeyippaan enpatu ndiccayamaaka irukkiRatu.*
NP + BE+ Adj + to-infinitive Clause John was first to arrive	Adv + V-*atu* + NP *mutalil vandtu ceerndtatu jaaN.*

Adjectival patterns of English	Parallel patterns in Tamil
NP + BE+ Adj. + [preposition + NP] PP John is anxious for news	NP + [NP-*ai* + postposition]PP + Adj + *iru* *jaaN ceytiyaip paRRi kavalaiyaaka irukkiRaan.*
NP + Adj. + (+ preposition) + Clause John is glad that you succeeded. John is anxious about how they got on.	NP + *enRu*-clause + NP + Adj + *iru* *ndii veRRi peRRaay enRu jaaNukku mazhcciyaaka irukkiRatu.* *avarkaL eppaTi camaaLikkiRaarkaL enRu jaaNukku kavalaiyaaka irukkiRatu.*

5.2.4. Transfer of adverbial phrases

The following points of typological comparison have to be noted while attempting to transfer adverbial phrases in English into Tamil.

1.An adverb occurs in attributive construction with a verb, an adjective, an adverb or a main clause in both English and Tamil.

2.Advebs in English are inflected for degree of comparison whereas adverbs in Tamil are not inflected for degrees of comparison

3.Adverbs in English follow the forms which they modify as in other SVO languages whereas in Tamil they generally precede the forms which they modify.

4.More than one adverb can occur in a sequence in both English and Tamil.

5.In Tamil adverbial stems are used in repetition to give more emphasis to the meaning expressed.

Umaa miiNTum miiNTum vandtaaL

'Uma came again and again'

The following table illustrates the transfer of adverbial patterns in English into Tamil.

Adverbial patterns of English	The parallel adverbial patterns in Tamil
Adverbs of Manner NP + Vi +Adv1 Usha ran fast.	NP + Adv + Vi *avaL veekamaaka ooTinaaL.*
NP + Vt + NP [O] + Adv1	NP + NP-ai + Adv + Vt

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
I ate banana hurriedly. Usha welcomed Uma warmly	*avaL vaazhaippazhattai viraivaaka caappiTTaaL.* *uSaa umaavai anpooTu varaveeRRaaL*
NP + Adv1 + Vt + NP [O] Usha warmly welcomed the minister from Chennai.	NP + NP-ai + Adv + Vt *uSaa cennaiyilurundtu vandta mandtiriyai anpooTu varaveeRRaaL*
1.NP + Adv1 + V + to-infinitive clause They secretly decided to go to Chennai. 2.NP + V + to-infinitive clause + Adv1 They decided to go to Chennai secretly.	NP + Adv + infinitive-clause + V *avarkaL irakaciyamaaka cennai cella muTivu ceytanar.* NP + infinitive-clause + Adv +V *avarkaL cennai cella irakaciyamaaka muTivu ceytanar.*
1. NP + V + NP [O] + Adv11 (ex. foolishly, generously, etc.) Usha answered the question foolishly. 2. NP + Adv1a + V + NP [O] Usha foolishly answered the question.	NP + Adv + NP-*ukku* + Vt *uSaa muTTaaLtanamaaka keeLvikku viTaiyaLittaaL* NP + NP-ukku + Adv + Vt *uSaa keeLvikku muTTaaLtanamaaka viTaiyaLittaaL*
1. NP + V (AV) + NP [O] + Adv12 (ex. badly and well) Kannan paid her well. Uma treated him badly. 2. NP + BE + Adv12 + V (PV) She was well paid. He was badly treated	NP + NP-*ukku* + Adv + V *kaNNan avaLukku ndanRaaka campaLam koTuttaan* *umaa avanai moocamaaka ndaTattinaaL* NP + NP-*ukku* + Adv + V *avaLukku ndanRaaka campaLam koTukkappaTTatu* *avan moocamaaka ndaTattappaTTaan.*
Adv (somehow) + …V… Somehow they did it. … V.. Adv (somehow) They did it somehow.	NP + Adv + NP-*ai* + Vt NP + NP-*ai* + Adv + Vt *avarkaL atai eppaTiyoo ceytaarkaL*

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
Adverbs of place 1. NP + V + Adv2 (away, everywhere, here, nowhere, somewhere, there etc.). Usha waits outside. Raja sent her aboard. Write it there. NP + V + PP + Adv2 Kannan looked for it everywhere. NP + Vt + NP + Adv2 Keep the book somewhere.	NP + Adv + V *uSaa veLiyee kaattirundtaaL* *raajaa avaLai veLindaaTiRku anuppinaan* *itai angkee ezhutu* NP + NP-ai + Adv + V *kaNNan atai ellaa iTangkaLilum teeTinaan* NP + NP-*ai* + Adv + V *puttakattai engkeeyaavatu vai.*
NP + Vt + (NP) + Adv21 (ex.somewhere and anywhere) Usha has seen it somewhere. Uma hasn't seen it anywhere. Kannan has gone somewhere. Kannan hasn't gone anywhere.	NP + (NP-ai) + Adv + V *uSaa atai engkoo paarttirukkiRaaL* *umaa atai engkum paarttirukkavillai* *kaNNan engkoo pooyirukkiRaan* *kaNNan engkum pooyirukkavillai*
Here/ there + BE/COME/GO + NP [S] Here's Usha's friend. There goes my wife. Here comes Raja. There comes the elephant**.**	*itoo/atoo* + NP *itoo uSaavin ndaNpar*. *itoo*/*atto* + NP + V *atoo en manaivi pookiRRaaL.* *itoo raajaa varukiRaan.* *atoo yaanai varukiRatu.*
There/here + NP [=Personal pronoun] + V There he goes Here he comes.	*atoo + NP + V* *atoo avan pookiRaan* *atoo avan varukiRaan.*
Adverbs of time Adv31 (Afterwards, eventually, lately, now, recently, soon, etc.) + NP + V + NP [IO] + NP [O]	Adv + NP + NP-*iTam* + NP-*ai* + V

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
Eventually Usha told Uma the secret NP + V + NP [IO] + NP [O] + Adv31 (afterwards, eventually, lately, now, recently, soon, etc.) Usha told Uma the secret eventually.	*muTivaaka uSaa umaaviTam irakaciyattaic connaaL.* *uSaa umaaviTam irakaciyattaic connaaL muTivaaka.* (marked style)
NP + V + Adv32 (before, early, immediately, and late) Kala came early. NP + V + Adv32 Uma has gone there before. Let's start late. Come immediately	NP + Adv + V *kalaa munnareettil vandtaaL.* NP + Adv + V *umaa munnareetil angku pooyviTTaaL* *ndaam taamatamaaka puRappaTalaamaa viraivaaka vaa.*
NP + V-perf + Adv33 (Since and ever since) Uma left Mysore in 1998. I haven't seen her since.	Adv + NP + NP-ai + V *umaa 1998-il maicuurukkuc cenRaaL. atanpiRaku ndaan avaLai paarkkavillai*
1. NP + V + (NP [O]) + Adv34 (yet and still) Usha hasn't come yet. Uma hasn't seen him yet. 2. NP + Adv34 + Vt + NP [O] Kalaa hasn't yet finished the work I gave her a week ago**.**	NP + (NP-ai) + Adv + V *uSaa ituvarai varavillai.* *umaa avanai ituvaraip paarkkavillai.* NP + Adv + (NP-ai) + V *kalaa ituvarai ndaan oruvaarattiRku munnar koTutta vellaiyai muTikkavillai*
Adverbs of frequency 1.NP + V + Adv4 (Always, continually, frequently, occasionally, often, usually, once, etc) + Adj/NP Usha is usually happy. NP + Adv + V Uma always comes late.	NP + Adv + V *uSaa vazhakkamaaka makizhcciyuTan irukkiRaaL.*

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
2. NP + Adv4 + V Jaya often comes late. Kala is often late. Kannan seldom visits Uma.	NP + Adv + V *umaa epootum taamatamaaka varukiRaaL* *jayaa epootum taamatamaaka varukiRaaL* *kalaa aTikkaTi taamatamaaka varukiRaaL* *kaNNan eppootaavatu umaavai paarkka vuruvaan*
1. NP + Aux1 + Adv4 + Aux2 + V Uma has often been warned. 2. Aux1 + NP + Adv1 + V Has Uma ever been warned?	NP + Adv + V *umaa epootum eccarikkap paTukiRRaaL.* NP + Adv + V *umaa epootaavatu eccarikkap paTTaaLaa*?
Adv1+ Adv41 + NP + V Secretly ever did Uma try to meet Usha? Adv42 + NP + V ... Seldom have Usha heard such a speech.	Adv + Adv + NP + NP-ai V *irakaciyamaaka epootaavatu umaa uSaavai candtikka muyanRaaLaa?* Adv + NP + NP-ai + V *aritaakat taan uSaa appaTippaTTa peecai keeTTirukkiRaaL*
There + BE + Adv4 (hardly, scarcely, and barely) + NP There is hardly any money left. NP + Adv4 + V… Usha hardly ever visit her friends.	NP + Adv + V *paNam konjam kuuTa miitamillai* NP + Adv + V *uSaa aritaakattaan taan ndaNparkaLai candtippaaL*
Sentence adverbs: These modify the whole sentence/clause and normally express the speaker opinion. NP + BE + Adv5 (actually, apparently, certainly, definitely, perhaps, surely, etc.) + Adj Usha is certainly right. Uma is apparently happy.	NP + Adv + Adj + BE *uSaa ndiccayamaaka cari* *uSaa veLippaTaiyaaka makizhcciyaaka irukkiRaaL*

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
NP + Adv5 + V … Kannan definitely looks happy.	NP + Adv + … V *kaNNan ndiccayamaaka makizhcciyaakat terikiRaan.*
NP + Aux1 + Adv5 + Aux2 + V Uma would obviously have gone. NP + Aux + Adv5 + V Usha will surely come.	NP + Adv + Aux1 + V *umaa ndiccayamaak pooy iruppaaL*. NP + Adv + V *uSaa kaTTaayamaaka varuvaaL*.
Adv5 + NP + V… Apparently Uma looks happy. NP + V …+ Adv5 Uma looks happy apparently**.**	Adv + NP + V *veLippaTaiyaaka umaa makizhcciyaakat terikiRaaL* *umaa makizhicciyaakat terikiRaal veLippaTaiyaaka*
NP + V … + Adv 51(definitely) Uma will like Usha definitely. NP + V … + Adv52 (perhaps and possibly) Perhaps Uma will like Usha.	NP + Adv + NP-*ai* + V *umaa ndiccayamaaka uSaavai virumpuvaaL.* Adv + NP + (NP-ai)+ V *oruveeLai umaa uSaavai virumpuvaaL*
Adv53 (admittedly, frankly, honestly, etc), NP + V … Honestly, Usha has won the first prize. .	Adv + NP + (NP) + V *unmaiyaaka uSaa mutal paricu peRRirukkiRaaL*.
Adverbs of degree NP + BE + Adv6 (quite, almost, barely, completely, enough, quite, rather, etc.) + Adj Ex. Usha is quite happy. Uma is extremely beautiful. NP + BE + Adv6 (quite, almost, barely, completely, enough, quite, rather, etc.) + V …	NP + Adv + Adj + iru *uSaa mikavum makizhcciyaaka irukkiRaaL* *uSaa mikavum azhakaaka irukkiRaaL*. NP + Adv +… + V *uSaa makizhcciyaaka irukkiRaal* *umaa mika mika azhakaaka iRukkiRaaL*

Adverbial patterns of English	**The parallel adverbial patterns in Tamil**
Kalaa was completely covered with mud. NP + HAVE + Adv6 + V… Bava had almost reached Chennai.	*kalaa muzhuvatum tozhiyaal muuTappaTTaL.* NP + Adv + …+ V *bavaa kiTTattaTTa cennaiyai aTaindtu viTTaaL.*
NP + BE + Adj + Adv61 (enough) The knife isn't sharp enough. That food is not good enough.	NP + NP + BE *kattikku kuurmai pootaatu.* NP + Adj + BE *caappaaTu ndanRaaka illai*
NP + Adv62 + V Uma almost fell down.	NP + Adv + V *umaa kiTTattaTTa vizhundtuviTTaaL.*
NP + V + Adv63 (only) … Usha ate only banana. Kala only gave me her pen. NP + V + NP + PP + Adv63 (only) ***Kala gave her pen to me only.***	NP + … + Adv + V *uSaa vaazhaippazham maTTum caappiTTaaL.* *kalaa maTTum taan peenaa koTuttaal* NP + … + Adv + V *kalaa peenaa maTTum taan koTuttaal*
NP + Aux + Adb64 (Just)+ V.. Uma has just gone home. Usha has just finished her work**.**	NP + Adv + …V + Aux *umaa ippootu taan viTTukkup pooyirukkiRaaL.* *uSaa ippootutaan veelaiyai muTittaal.*

5.2.5. Transfer of prepositional phrases

Adposition is cover term used to incorporate preposition, postposition and cases markers. For the sake of correlation we have to take into account the case suffixes of Tamil also under adposition. The difference, as we are well aware of, is that the case suffixes are inflectional elements of nouns and pronouns, whereas postpositions are loosely added after the oblique forms or case inflected forms of nouns and pronouns. As both of them are used to express different case relations, they are not distinguished from one another for the sake of computation.

The following points are the out come of typological correlation of adpositional phrases in English and Tamil.

1. English generally makes use of prepositions to denote the case relation existing

between verb and noun phrase. But Tamil mostly makes use of case suffixes to denote various case relations. Of course, Tamil too makes use of postpositions at par with English prepositions.

2. Fairly obviously word order is an alternative to case marking in distinguishing subject from object in languages like English. In English the word order also distinguishes the patient object from the recipient or beneficiary object in double object constructions where the patient object always follows the other object:

She gave me good marks.

She cut me a bunch of dahlias.

3. It has frequently been observed that there is a correlation between the presence of case marking on noun phrases for the subject-object distinction and flexible word order and this would appear hold true for Tamil.

4. Typologically it appears that there is a tendency for languages that mark the subject-object distinction on noun phrases to have the basic order of subject-object-verb (SOV), and conversely a tendency for languages lacking such a distinction to have order subject-verb-object (SVO). This statement appears to hold true for English and Tamil.

The following table illustrates the transfer of prepositional phrases in English into Tamil.

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
At + NP He is standing at the bus stop.	Dimension type 0 position	NP-oblique+-*il* *avan peerundtu ndilaiyattil ndiRkiRaan*
To + NP He went to Chennai Give it to me.	Dimension type 0 destination	NP-oblique+*ku/ϕ* *avan cennaikkuc cenRaan* NP-oblique + *iTam* *enniTam koTu*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
On + NP The book is on the table.	Dimension type ½ position (line or surface)	NP-oblique+*il/meel* *meecai il/meel puttakam irukkiRatu*
on (to) + NP He fell on (to) the floor.	Dimension type ½ destination (line or surface)	NP-oblique+*il* *avan taraiyil vizhundtaan.*
In He is in the village.	Dimension type 2/3 position (area or volume)	NP-oblique+*il* *avan kiraamattil irukkiRaan.*
in(to) Kannan dived in(to) the water.	Dimension type 2/3 destination (area or volume)	NP-oblique+*il* *kaNNan taNNiiril kutittaan.*
Away from (=not at) + NP He is away from Chennai.	Dimension type 0 position	NP-oblique+*il +illai* *avan cennaiyil illai*
Away form + NP He went away form Chennai.	Dimension type 0 destination	NP+accusative + *viTTu* *avan cennaiayai viTTup poonaan*
Off + NP The books were off (= not on) the shelves.	Dimension type ½ position (line or surface)	NP-oblique+-*il +illai* *puttakangkaL SelpukaLil illai*
Off + NP He took the book off the shelves	Dimension type ½ destination (line or surface)	NP-oblique+-*il + irundtu* *avan SelpukaLilirundtu puttakattai eTuttaan.*
Out of (=not in) + NP He is out of the office.	Dimension type 2/3 position (area or volume)	NP-oblique+-*il +illai* *avan aluvalakattil illai*
Out of + NP	Dimension type 2/3	NP-oblique+-*il+ irundtu +*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
He went out of the office.	destination (area or volume)	*veLiyee* *avan aluvalakattilirundtu veLiyee poonaan*
Above/ over/ on top of + NP The lamp is hanging over the head.	SUPERIOR	NP-oblique+(dative) + *meel/meelee* *Talaikku meelee viLakkut tongkukiRatu.*
Below/ under/ underneath/ beneath + NP The dog is lying under the table.	INFERIOR	1. Inferior location ‘under’ NP-oblique+*in*+ *kiizh/ kiizhee/ aTiyil* 2. Inferior location ‘below’ NP-oblique+*in*/dative + *kiizh/ kiizhee* *meejaiyin aTiyil ndaay kiTakkiRatu*
in front of + NP The house is in front of the temple.	ANTERIOR	NP+dative + *munnaal, munp/ mun/ munnar/ mundti* *koovilukku munnaal viiTu irukkiRatu*
Behind + NP The house behind the temple.	POSTERIOR	NP+dative + p*innaal, pin, pinup, pinnar, pindti* *Koovilukkup pinnaal viiTu irukkiRatu.*
Into/ inside + NP He is inside the house.	INTERIOR	NP+dative + *uL, uLLee* *avan viiTTukkuL irukkiRaan.*
out of/ outside + NP He went out of the	EXTERIOR	NP+dative + *veLiyee* *avan viiTTuku veLiyee*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
house.		*cenRaan*
Near/ by/ beside/ by the side of/ at the side of + NP He went near her.	NEAR	NP+dative + *arukil pakkattil/ kiTTee* *avan avaL pakkattil cenRaan.*
With + NP The onion is lying with potato.	In the same place as position	NP-oblique + *ooTu/ uTan venkaayam uruLaikkizhankuTan kiTakkiRatu*
With + NP He went with her.	In the same place as Accompaniment	NP-oblique + *ooTu/ uTan/ kuuTee* *avan avaLooTu cenRaan*
Between, amid, amidst, among, Amongst + NP The Minister stood among the people.	BETWEEN	NP+dative + *iTaiyil/ ndaTuvil* *mandtiri makkaLukku ndaTuvil ndiRkiRaar*
Beyond + NP The school is beyond the temple.	ULTERIOR	*NP+accusative+ taaNTi* NP+dative + *appaal* *koovilukku appaal paLLikkuuTam irukkiRatu*
Opposite to + NP The house is opposite to the temple.	CITERIOR	NP+dative+ *etiree/ etiril/ etirkku/ etirttaaRpoola* *koovilukku etiree viiTu irukkiRatu*
Around + NP The trees are around the house.	CIRCUMFERENTIAL	NP+accusative + *cuRRi* *ViiTTaic cuRRi marangkaL irukkinRana.*
Across + NP They went across	ACROSS	NP+accusative+ *taaNTi* *avarkaL aaRRait taaNTi*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
the river. They went across the river.		*cenRaarkaL.* NP-oblique-in+*kuRukee* *avarkaL aaRRin kuRukkee cenRaarkaL*
Through + NP He went through the forest.	THROUGH	NP + *vazhiyaaka* *avan kaaTTu vazhiyaakap poonaan.*
Along + NP He went along the road.	ALONG	NP + *vazhiyaaka* *avan caalai vazhiyaakap poonaan.*
Towards + NP He went towards the park.	TOWARDS	NP+accusative + *ndookki, paarttu* *avan puungkaavai ndookkic cenRaan.*
From + NP He went from house.	SOURCE	NP + locative *il* + *irundtu, NP*+accusative + *viTTu* *avan viiTTai viTTuc cenRaan.*
To + NP He gave her money.	GOAL	NP-oblique +*ku/ iTam* *avan avaLiTam paNam koTuttaan.*
Because of + NP He came there because of her.	CAUSE	NP-oblique+*aal* *avan avaLaal angku vandaan* NP + *kaaraNamaaka* *avan avaL kaaraNamaaka vandtaan.*
For + NP He came there for seeing her.	PURPOSE	NP+dative + *aaka* *avan avaLaic paarpatarkaaka angku vandaan*
With + NP He treated her with	MANNER	NP-oblique+*ooTu/ uTan* NP+ *aaka* *avan avaLai mariyaataiyooTu*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
respect.		*ndaTattinaan.*
By means of/ by +NP I came by bus	MEANS	NP+oblique+*aal* *ndaan pusil/pusaal vandteen*
By + NP He beat the animal by a cane. “	INSTRUMENT	NP+oblique+*aal* *avan andta vilangkai pirampaal aTittaan.* NP+accusative+ *vaittu/ koNTu* *avan andta vilangkai pirampaal koNTu aTittaan.*
About + NP He talked about her. .	ABOUT	NP+accusative + *paRRi/ kuRittu* *avan avaLaip paRRi peecinaan*
in connection with + NP He went to Chennai in connection with his business.	CONNECTION	NP+accusative+ o*TTi* *avan tan viyaapaarattai oTTi cennai cenRaan*
For + NP He struggled for her.	SUPPORT	NP+dative +*aaka, veeNTi* *avan avaLukku veeNTi pooraaTinaan..*
Against + NP He fought against them.	OPPOSITION	NP+dative + *etiraaka* *avan avarkaLukku etiraaka caNTaiyiTTaan*
except for/ with the exception of/ excepting/ except/ but for/ barring + NP	EXCEPTION	NP+accusative+ *tavira/ tavirttu/ ozhiya*

Preposition + NP in English	**Prepositional relations/meaning**	**NP + postposition in Tamil**
All except Usha came to office.		*usaavait tavira elloorum aluvalakattiRku vandaarkaL*
instead of + NP He drank coffee instead of tea.	SUBSTITUTION	NP+dative + *patilaaka* *avan teendiirukkup patilaaka kaappi arundinaan*
But for + NP But for him I have not bought the gift.	NEGATIVE CONDITION	NP + *illaaviTTaal/ allaamal* *avan illaaviTTaal ndaan inda paricai vaangki irukka maaTTeen.*
with/ out of + NP He walks with walking stick	Incredient	NP-oblique+*aal* NP-oblique+(*ai*) + *koNTu/ vaittu* *avan ndaTakool koNTu ndaTandtaan*

5.2.6. Transfer of phrasal co-ordination

There are different types of phrasal co-ordination.

Type of coordination	**In English**	**In Tamil**
Coordination of noun phrases	1. NP and NP Noun phrases are commonly conjoined Ram and Prem are brothers. 2. NP or NP Ram or Prem will come 3.Either NP or NP Either Ram or Prem did it.	1. NP-*um* NP-*um* *raamum pireemum cakootararkaL* 2. NP-*oo* NP-*oo* *raamoo pireemooi varuvaarkaL* 3.NP-*oo* NP-*oo* V-negative *ramoo pireemoo atai ceyyavillai.* (Note in Tamil the clitic *oo* can be replaced by negative element *allatu*.)

Type of coordination	**In English**	**In Tamil**
	4.neither NP nor NP Neither Ram nor Prem did it.	*raam allatu pireem iruvarumee ceyyavillai*
Coordination of more than two noun phrases	NP, NP,…and/or NP *And* and *or* can link more than two NPs, and all but the final instance of the conjunctions can be omitted. We congratulated Ram, Prem, and Beem.	1.Conjunction NP-*um*, NP-*um*, NP-*um*… *ndaangkaL raamaiyum, preemaiyum, piimaiyum paaraaTTinoom.* 2. Disjunction NP-*oo*, NP-*oo* *ndaangkaL raamaiyoo, preemaiyoo piimaiyoo paraaTTinoom.*
Coordination of determiners	Det and/or Det Demonstratives can be linked to each other or to other determiners in the NP. Take this and that Take this (pen) and that pen.	1.Det-um Det-um *Itaiyum ataiyum eTu* 2.Det+N+*um* + Det + N+*um* *Indta peenaavai-um andta peenaavai-um eTu.* *Indta peenavaiy-oo andta peenavai-oo eTu.*
Coordination of adjectival phrases	Adj P and/or Adj P Adjectives both predicative and attributive can be conjoined. She is beautiful and smart.	AdjP+*um/oo*+*AdjP*+*um/oo* *avaL azhakaakavum keTTikaarattanamaakavum iRukkiRaaL*
Coordination of adverbial phrases	Adv P and/or Adv P Adverbials and dependent clauses can be conjoined. I can announce it loudly or by using a speaker.	Adv+*um/oo*+Adv+*um/oo* *ennaal itai captamaakavoo allatu olipperukki koNToo aRivikka iyalum*
Coordination of prepositional	PP and/or PP Prepositional phrases can also be	PP+*um/oo*+PP+*um/oo* *avan tan peenaavai*

Type of coordination	In English	In Tamil
phrases	conjoined. He looks for his pen inside and outside the box The test in April and in May is postponed.	*peTTikku uLLeeyum veLiyeeyum teeTinaan* NP+ *maRRum*+NP *eeppiral maRRum meey teervukaL ottivaikkap paTTirukkinRana.*

5.3. Transfer of clauses

Three important types of subordinate clauses and the four non-finite sub classes that can be structurally identified for English are correlated with that of Tamil.

Type	English	Tamil
Finite clause	As+ S+S As she is ill, she cannot attend her class.	*atu*-clause-*aal* + S *uTalndalam illaatataal avaLaal vakuppiRkucc cella iyalaatu*
Non-finite clause	1. Infinitive clause with *to* It is better for you to do that work. 2.Infinitive clause without *to* All he did was open the door. 3.ing-partcipal clause Having arrived late, he was disappointed. 4.ed-participal clause They hurried home, the work is completed.	1. *atu*-clause + S *ndii anda veelaiyaic ceyvatu ndallatu.* 2. *atu*-clause + S *avan ceytatu ellaam katavaitt tiRandtatu taan.* 3.Verbal participle clause + S *taamatamaaka vandtu avan eemaandtaan* 4. S [...V-finite + S[...V-finite]S *.avarkaL viraivaakac*

		cenRaarkaL. veelai muTindtu viTTatu.
Verbless clause	[Although + ...]Vebless clause + S Although very cheerful, Mary has many problems.	*aalum*-clause + S *mika makizhcciyaaka irundtaalum, meerikku pala cikkalkaL uNTu.*

Dependent clause may function as subject, object, complement or adverbial.

Depended clauses and their functions in English	**Equivalent clauses and their functions in Tamil**
[That…]NP + VP Subject That he is lazy is a fact.	S + *enpatu* + NP Subject *avan coompeeRi enpatu uNmai*
NP V [that…]NP Direct object I know that he likes you.	S + *enRu* + S Direct object *avan unnai virumpukiRaan enRu enakkut teriyum.*
NP BE [that…]NP Subject complement The point is that he is your friend.	S + *enpatu* + NP *avan unnuTaiya ndaNpan enpatu kuRippu.*
NP + V interrogative clause {IO}+ NP {O} Indirect object I gave whoever it was a cup of tea.	… V-*aalum* clause + S *yaaraaka irundtaalum ndaan oru kooppai teendiir koTutteen.*
S+ participle clause He found her excited with joy.	*avaL makizhcciyaaka irukka avan kaNTaan*
Adverbial clause + S Adverbial When we meet, I shall explain it.	V-*um* + *pootu* clause + S *ndaam candtikkum pootu ndaan atai paRRi viLakkuveen*

Subordinate clauses in English and Tamil can be correlated according to semantic criteria–whether their perspective on the content of the superordinate clause, as indicated by their subordinator, is one of time, location, manner, reason, etc.

Subordinate Clauses in English	**Perspectives**	**Subordinate Clauses in Tamil**
S + After +S ex. I questioned them after Usha met them.	TIME	…V+past+adjectival participle + *pinnar/ piRaku*+ S *uSaa avarkaLai candtitta pinnar/piRaku ndaan avarkaLiTam keeLvi keeTeen*
S + before + S I saw Ramu before he died	TIME	V+*um* + *mun* *raamu caakum mun ndaan avanaip paartteen*
S + since + S I am in contact with them since I last met them.	TIME	…V-*atu* clause +*il*+*irundtu* + S *ndaan avarkaLaik kaTaiciyaakac candittatilirundtu avarkaLiTam toTarpu vaittirukkiReen*
S + until + S I will be staying in Chennai until we meet again	TIME	…V-*atu* clause + *varai* + S *ndaam miiNTum candtippatu varai ndaan cennaiyil iruppeen.*
S + when + S I hated you when you were in love with him.	TIME	Adjectival clause + *pootu* + S *ndii avaLiTam kaatal koNTirukkum pootu ndaan unnai veRutteen*
S+ while + S I was watching them while they were eating.	TIME	Adjectival clause + *pootu* + S *avarkaL caappiTukiRa pootu ndaan avarkaLaip paarttuk koNTirundteen.*
S + where + S I don't know where Sujatha went.	LOCATION	…*engku* + V-finite + *enRu* + S *cujaataa engku cenRaaL*

Subordinate Clauses in English	**Perspectives**	**Subordinate Clauses in Tamil**
		enRu enakkut teriyaatu
S + because + S I went out because Uma was angry	REASON	*aal*-clause+ S *umaa koopamaaka irundtataal ndaan veLiyee pooneen.*
Since +S Since you didn't pay money, we will not give you books	REASON	*aal*-clause + S *ndii paNam kaTTaatataal ndaangkaL unakkup puttakam tara maaTTom*
S + as if + S He acted as if Usha was sick.	MANNER	atu-clause + *pool* + S *uSaa uTal ndamillaatatu pool avan ndaTittaan.*
S + as though + S He acted as though Kannan hadn't seen him	MANNER	*atu*-clause + *pool* + S *kaNNan tannaip paarkkaatatu pool avan ndaTittaan.*
S+need +S I need a bag so that I can take it safely.	PURPOSE	*ataRkaaka*-clause + S *atai paatukaappaaka eTuttuc celvataRkaaka enakku oru pai veeNTum*
S+in order that+S I encouraged Rajan in order that he would confer.	PURPOSE	…*um*-clause + *paTi* + S *raajanaik kalandtaaloocikkum ndaan uRcaakap paTuttineen*
S+so as to +V1... He went through a small lane so as to avoid the police	PURPOSE	*ataRkaaka* clause + S *avan kaavalarait tavirppataRkaaka oru kuRukiya paatai vazhiyaakac cenRaan*
S+in order to+V1... He went through a small lane in order to avoid the police	PURPOSE	*ataRkaaka* clause + S *avan kaavalarait tavirppataRkaaka oru kuRukiya paatai vazhiyaakac*

Subordinate Clauses in English	**Perspectives**	**Subordinate Clauses in Tamil**
		cenRaan
S + as (many) as + S I had eaten as (many) apples as Uma had eaten.	COMPARISON	NP ... *ettanai* + NP + V-finite-oo + *attanai* + NP + ...+ V-finite *umaa ettanai appiL caappiTTaaLoo attanai aappiL ndaanum caappiTTeen.*
S + more than + S I had eaten apples more than Uma had eaten.	COMPARISON	*atu-ai* clause + *viTa kuuTutal* + S *umaa cappiTTatai viTa kuuTutal ndaan caappiTTeen*
NP + BE + Adj (comparative degree) + than + NP I am taller than Usha.	COMPARISON	NP + NP-*ai* + *viTa* + Adj+pronominalizer+{*-aay* + *iru*} *ndaan uSaavai viTa uyaramaanavan*
S + although + S She thanked them although they refused her suggestion.	CONTRAST	adjectival clause + *pootilum* + S *avarkaL avaL karuttai maRutta pootilum avaL avarkaLukku ndanRi kuuRindaaL.*
S + even though + S She behaved politely even though she was rich.	CONTRAST	adjectival clause + *pootilum* + S *avaL paNakkaariyaay irundta pootilum avaL mariyaataiyaay ndaTandtu koNTaaL*
S + despite + S I ate two eggs despite (my) hating	CONTRAST	adjectival clause + *pootilum* + S *ndaan muTTaiyai veRutta*

Subordinate Clauses in English	Perspectives	Subordinate Clauses in Tamil
eggs.		*pootilum iraNTu muTTaikaL caappiTTeen.*
S + so (that) +S He had spent a lot of money on the project so (that) it was a success.	RESULT	V-infinitive + *veeNTum* + *enpataRkaaka* + S *tiTTam veRRi peRaveeNTum enpataRkaaka avan ndiRaiya paNam celavazhittaan.*
Please get the letter from Raju if he had read it.	CONDITION	aal-clasue + S *Raaju andta kaTitattaip paTittuviTTaal atai avaniTamirundtu vaangkit taravum.*

The following are the different dependent clauses whose transfer is dealt here.

1. The nominal clauses
2. Adverbial clauses
3. Adjectival clauses
4. Comparative clauses
5. Comment clauses

5.3.1. Transfer of nominal/complement clauses

The different kinds of nominal/ complement clauses are tabulated below.

Clauses in English	Clauses in Tamil
1.1.that-clause functioning as subject ex.That she is beautiful is true.	1.1.S + enpatu + NP *avaL azhakaanavaL enpatu uNmai*
1.2.that-clause Functioning as direct object ex. I told him that she was beautiful	1.2. S + enRu + S *ex. avaL azhakaanavaL enRu avaniTam kuuRineen.*
1.3 That-clause functioning as oppositive Ex.Your assumption, that things will	S + *enRa* + S *kaariyangkaL meenmaiyaTaiyum enRa*

Clauses in English	**Clauses in Tamil**
improve, is understood.	*unnuTaiya karuttu terikiRatu.*
1.4.That-clause functioning as adjectival complement I am sure that things will improve.	S + *enRu* + S *kaariyangkaL meenmaiyuRum enRu ndaan uRutiyaaka ndampukiReen*.
2.1. wh-clause functioning as subject What he is searching for is a house.	*atu*-clause + S *avan teeTikkoNTirukkiRatu oru viiTu*
2.2. wh-clause functioning as direct object He wants to eat whatever is ready.	Interrogative *oo*-clause + S *etu tayaaraaka irukkiRatoo atai avan caappiTa virumpukiRaan*
2.3.wh-clause functioning as indirect object She gave whoever came a cup of tea.	Interrogative *oo*-clause + S *yaar vandtaarkaLoo avarkaLukku avaL teendiir koTuttaaL*
2.4.wh-clause functioning as subject complement The truth is what I guessed correct.	Interrogative *oo*-clause + S *etu cariyenRu ndaan ndinaitteenoo atu taan uNmai*
3.If/whether-clause functioning as direct object I don't care if/whether he is available.	*aalum*-clause + S *avan irundtaalum ndaan ataippaRRi kavalaip paTavillai*
4. Nominal relative clause introduced by wh-element. What he is looking for is a wife.	*atu*-clause + S *avan teeTikkoNTiruppatu oru manaiviyai*
5.1.To-infinitive nominal clause functioning as subject For a boy to do that is strange.	*atu*-clause + NP *oru paiyan itaic ceyvatu aticayamaanatu*
5.2.To-infinitive nominal clause as subject complement Her intention is to become a doctor.	*atu*-clause + NP *oru maruttuvaraavatu avaLatu viruppam.*
6.Nominal ing-clause as subject complement. His hobby is collecting stamps.	*atu*-clause + S *anjcal villaikaL ceekarippatu avanuTaiya pozhutu pookku*
7.Bare infinitive All he did was press the button.	*atu*-clause + S *pottaanai amukkiyatu taan avan ceytatu*

Clauses in English	Clauses in Tamil
8.Verbless clauses Mosaic flooring in every room is expensive.	*atu*-clause + S *ovvoru aRaiyaiyum mocaik tarai pooTuvatu perunjcelavaakum.*

5.3.2. Transfer of adverbial clauses

The following table shows the correlative features of adverbial clauses in English and Tamil.

Clause structures in English	Type of clause	Equivalent clause structures in Tamil
1.1.S + after + S ex. I went to Madurai after she left Chennai.	1.Clause of time	Adjectival clause + *piRaku, pinnaal, pinpu, pinnar, pin* ex. *avaL cennaiyai viTTu poona pinnar ndaan maturai cenReen.*
1.2. S + before + S ex. She left the college before she finished her education.	"	*ataRku*-clause + *munnaal, munpu, munnar, mun* + S ex. *avaL tan paTippai muTippataRku munnaal kalluuriyai viTTup pooyviTTaaL.*
1.3.S + since + S ex. I am working as teacher since we last met.	"	*atu* clause + *il irundtu* ex. *poona taTavai ndaam candittatilirundtu ndaan aaciriyaraakap paNiyaaRRukiReen.*
1.4. S + until + S ex. I will be at Chennai until we meet again	"	Adjectival *um*-clause + *varai* + S *ex. ndaam miiNTum candtikkum varai ndaan cennaiyil iruppeen.*
1.5.S+ When + S ex. I met you when you were in Chennai.	"	Adjectival clause+ *pootu* *ex. ndii cennaiyil irundta pootu ndaan unnaic canditteen.*

Clause structures in English	**Type of clause**	**Equivalent clause structures in Tamil**
1.6.while …V-ing ex. He watched them while they were eating	"	Adjectival clause (i.e. RC) + *pootu* *ex. avarkaL caappiTTukkoNTirundta pootu avan avarkaLai kavanittaan.*
2.1.S + where + S I met her where she was working. "	2.Clause of place	*...engku* …V-finite-*oo angku* ...V-finite *avaL engku veelai ceykiRaaLoo angku avan avaLaic candtittaan.* Or Adjectival clause + *iTam* *avan avaL veelai ceykiRa iTattil avaLaic candtittaan.*
2.2.S + wherever + S He accompanied her wherever she went. "	"	… *engkellaam* .. V-finite-oo + *angkellaam* … V-finite *avaL engkellam cenRaaLoo angkellam avanum kuuTac cenRaan.* Adjectival clause + *iTamttiRkellaam* *avaL cenRa iTattiRkellam avanum kuuTac cenRaan*.
3.1.If +S +S If he performs well, he will win the prize. If you wait, (then) you can meet him. 1.Real condition If she comes, I'll talk to her. If it rains, the picnic will be cancelled.	3.Clause of condition	*aal*-clause + S *avan ndanRaaka ceyalpaTTaal, paricu peRuvaan.* *ndii kaattirundtaal avanaic candtikkalaam.* 1.Real condition *avaL vandtaal ndaan avaLiTam peecuveen.* *mazhai vandtaal piknik rattu*

Clause structures in English	**Type of clause**	**Equivalent clause structures in Tamil**
2.Unreal condition If she came, I'd talk to her.		*ceyyappaTum.* 2.Unreal condition *avaL vandtirundtaal, ndaan peeciyiruppeen.*
3.2.Unless + S + S Unless it rains, the crops will die.	"	V+*aa*+*viTTaal*-clause + S *Mazhai peyyaaviTTaal, payirkaL iRanduviTum.*
3.3.Had+ S+S Had I been there, I'd have congratulated you.	"	aal-clause + S *ndaan angku irundtaal, unnai paaraaTTiyiruppeen*
4.1.although + S + S Although he tried hard, he failed.	4.Clauses of concession	Adjectial + *pootilum*-clause + S *avan mikundta ciramappaTTa pootilum tooRRuviTTaan*
4.2. if + S + S If he's poor, at least he's happy.	"	Adjectival + *pootilum*-clause + S *avan ezhaiyaaka irundta pootilum makizhcciyaaka irukkiRaan*
5.1.because + S ex. I could not meet Uma, because she was ill.	5.Clause of reason or cause	Adjectival clause + *kaaraNattaal* + S *ex. umaa uTal ndalamillaamal irundta kaaraNattaal ndaan avaLaic candtikka muTiyavillai.*
5.2. S + since + S ex. I did not work hard since you didn't give me salary.		Adjectival clause + *kaaraNattaal ndii enakkuc campaLam taraata kaaraNattal ndaan kaTinamaaka uzhaikkavillai.*
6.1. Since + S + S Since the rain has stopped, we shall go out.	6.Clause of circumstances	*aal*-clause + S *mazhai ndinRuviTTataal, ndaam veLiyee poovoom.*
6.2.As + S + S	"	*aal*-clause + S

Clause structures in English	**Type of clause**	**Equivalent clause structures in Tamil**
As it was dark, she hesitated to go out.		*iruTTaaka irundtaaal, avaL veLiyee pooka tayangkinaaL*
7.1.S+so that + S ex. He worked hard, so that he could succeed.	7.Clause of purpose	*um*-clause *enpataRkaaka* + S ex. *veRRi peRaveeNTum enpataRkaaka avan kaTinamaaka uzhaittaan.*
7.2.S + in order that + S ex. We eat well, in order that we may be healthy.	"	*um*-clause + *enpataRkaaka* *raaju kuRRattai oppukkoLLaTTum enpataRakaaka*
7.3.S + to-infinitive clause He walked fast, to catch the train	"	Infinitive clause + S *avan rayilaip piTikka viraivaay ndaTandtaan*
7.4.S + so as + infinitive-clause ex. She studied hard, so as to get the scholarship.	"	*veeNTum*-clause + *enpataRkaaka* + S *avaL uukkattokai kiTaikka veeNTum enpataRkaaka ndanRaakap paTittaaL*
7.5.S + in order + infinitive-clause ex. He went through the narrow lane in order to avoid the police.	"	*VeeNTum*-clause + *enpataRkaaka* + S *ex. kaavalariTamirundtu tappa veeNTum enpataRkaaka avan kuRukiya paatai vazhiyaakac cenRaan.*
7.6.S + in order that + S We eat well, in order that we may be healthy	"	*veeNTum*-clause + *enpataRkaaka* *aarookiyamaaka irukkaveeNTum enpataRkaaka ndaam ndanRaakac caappiTukiRoom*
8. S + so that + S He practiced well, so that he could perform well.	Clause of result	*um-clause* + *paTikku* + S *avan taan ndanRaaka ceyalpaTum paTikku*

Clause structures in English	**Type of clause**	**Equivalent clause structures in Tamil**
The dog barked so loudly that the thief fled		*ndanRaaka payiRci ceytaan TiruTan ooTum paTikku ndaay kuraittatu*
S + as if + S ex. Raja acted as if he was sick	Similarity	*atu*-clause + *poola/pool* *ex.raajaa uTalndalamillaamal irundtatu poola ndaTittaan*
S + as though + S ex. He acted as though Usha has not seen him	Similarity	*atu*-clause + *poola/pool* *ex. uSaa avanaip paarkkaatatu poola avan ndaTittaan.*
… as …as… ex. Ramesh came as frequently as Raja.	Similarity	NP-*ai*+ *poola* *rameeS raajaavaip poola aTikkaTi vandtaan.*
…more than + S Raja spent more than Uma had spent.	Difference	NP-*ai* + *viTa kuuTutal* ex. *raajaa umaa viTa kuuTutal celavazhittaaL.*
(fast)er than + NP ex. Raja walked faster than Ramesh.	Difference	NP-*ai*+ *viTa* *raajaa rameeSai viTa viraivaaka ndaTandtaan*
(al)though + S ex. He gave them money although they refused to accept it.	"	Adjectival clause + *pootilum* *avarkaL eRRukkoLLa maRutta pootilum avan avarkaLukkup paNam koTuttaan.*
S + even though + S ex. She behaved politely even though she was rich.	"	Adjectival clause + *irundta pootilum* *avaL paNakkaariyaaka irundta pootilum ndanRaaka ndaTandtukoNTaaL.*
despite + ing-clause ex. Despite (my) hating eggs I ate two.		Adjectival clause + *pootilum* *ndaan muTTaiyai veRutta pootilum iraNTu muTTaikaL caappiTTeen.*

Clause structures in English	Type of clause	Equivalent clause structures in Tamil
so (that) + S ex. He spent lavishly so (that) he became pauper soon.	Reason	*ataRkaaka*-clause *avan vaRiyavanaavataRkaaka taaraaLamaaka celavazhittaan*

5.3.3. Transfer of adjectival Clauses

Adjectival clause or relative clauses are clauses linked to a noun in their container clause, frequently with a WH form like the relative pronoun *which* and *whom*. As relative clauses qualify an NP, it performs the function of an adjective.

The girl who is clever

The following points have to be remembered while transferring a relative clause construction in English into Tamil.

1. In English the relative construction occurs in the finite form whereas in Tamil the verb in relative construction occurs in the non-finite form.
2. In English, the verb follows the head noun whereas in Tamil, it precedes the head noun.
3. In both the languages, the verbal form in the relative construction has time relation.
4. In English the relative pronoun has always a co referential noun whereas in Tamil, there is no co referential noun to the head noun.
5. In English, the relative construction occurs in conjunction to qualify the co referential noun whereas in Tamil, the relative participle occurs in succession to qualify the head noun.
6. In Tamil, an adjective may intervene between the non-finite verb and the head noun.

The following table gives the three types of relative clauses in English and their parallel clauses in Tamil.

Types of relative clauses in English	Their equivalents in Tamil
1.Restrictive relative clause as post modifiers: 1.1. [NP + [relative word + S]] NP	[[… V+Tense/negative+relative participle] + NP]]NP

The boy that is eating is her friend. 1.2. [NP + S] NP The table we bought was strong.	*caappiTTukkoNTiruppatu avaLuTaiya ndaNpan.* *ndaam vaangkina meecai valimaivaayndtatu.*
2.Non restrictive relative clause as post modifiers [[NP + [relative word + S]] NP She met Kannan who greeted her.	[[…V+Tense/negative+relative participle] + NP]]NP. *vaazhttu terivitta kaNNanai avaL candtittaaL*
3.Non finite relative clause as post modifiers 3.1.[[NP + [V-ing …]]NP The boy drawing the picture is my son. 3.2.[[NP + [V3 …]] NP The man rejected by you is my uncle. 3.3.[[NP [infinitive clause]]NP The next girl to sing is my daughter.	[[…V+Tense/negative+relative participle] + NP]]NP *paTattai varaindtu koNTirukkiRatu ennuTaiya makan.* *unnaal taLLappaTTa manitar en maamaa.* *aTuttu paaTa irukkum ciRumi en makaL.*

5.3.4. Transfer of comparative clauses

The following table correlates the comparative elements used in English and Tamil.

Meaning	**Comparative elements in English**	**Comparative elements in Tamil**	**Comment**
Similarity	as….as so…as She is as clever as her brother.	*pool, poola* *avaL tan cakootaranaip poola aRivuLLavaL.* *avaL tan cakootariyaip poola aRivuLLavaLaay irukkiRaaL*	Tamil makes use of pronominalized forms of adjectives instead of adjectives while denoting the present state/quality.The formation can be captured by the following rule:

Meaning	Comparative elements in English	Comparative elements in Tamil	Comment
			[[Adj+[pronominalizer]NP+{aay]Adj +iru}]]
Dissimilarity	Than She is cleverer than her brother.	*viTa, kaaTTilum* *avaL tan cakootaranai viTa/ kaaTTilum aRivullavaL.* *avaL tan cakootariyai viTa/ kaaTTilum aRivuLLavaLLay irukkiRaaL*	The comment in the above column is applicable here too.

5.3.4.1. Comparative clause of quality

The following table illustrates the transfer comparative clauses of quality.

Adjectival form in English	Degree	Parallel form in Tamil
NP + BE + as + positive form of adjective + as + NP ex. Uma is as beautiful as Usha.	Similarity Positive degree	NP + NP-*ai* + *poola* + Adjective + iru *Umaa uSaavaip poola azhakaay irukkiRaaL.*
NP + BE + more + adjective + than + NP Uma is more beautiful than Usha.	Dissimilarity Comparative degree	NP + NP-*ai* + *viTa* + Adjective + *iru* *umaa uSaavai viTa azhakaay irukkiRaaL*
NP + BE + Comparative form of adjective + than + NP ex. Raja is taller than	Dissimilarity Comparative degree	NP + NP+*ai* + *viTa* + Adjective+ *iru* *ex. raajaa rameeSai viTa uyarmaaka irukkiRaan.*

Ramesh.		
NP + BE + the + Superlative form of adjective + among all Raja is the tallest among all.	Dissimilarity Superlative degree	NP + NP + *elloorilum/ellaavaRRilum* + Adjective + *iru* ex. *rajaa avarkaL elloorilum uyaramaay irukkiRaan.*

5.3.4.2. Comparative clause of quantity

The following table illustrates the transfer of comparative clauses of quantity.

English	**Degree**	**Tamil**
…NP…+ HAS + as + many + NP + as … Ram has as many shirts as Sam has.	Positive degree Clause of similarity	NP-*iTam* + *ettanai* + NP iru+ Tense+PNG-oo + *attanai* + NP + NP-*iTam iru* + Tense + PNG *RaamiTam ettanai caTTaikaL irukkinRanavoo attanai caTTaikaL caamiTamum irukkiRana.*
NP…+ HAVE + more + NP + than + NP + HAVE Ram has more shirts than Sam has.	Comparative degree Clause of difference	NP-*iTam* + *ettanai* + NP *iru*+Tense+PNG-oo + *atai viTa kuuTutal* + NP + NP-*iTam* + *iru* + Tense + PNG *RaamiTam ettanai caTTaikaL irukkinRanavoo atai viTa kuTutal caTTaikaL caamiTam irukkiRana*

5.3.4.3. Comparative clause of adverbs

Adverbial comparative construction varies based on the three degrees of comparison. The three forms of adverbs, positive, comparative and superlative forms, can be referred from the DEWA.

English	**Tamil**
Positive degree With the positive form *as...as* in the affirmative and *as/so...as* in the negative are used Uma shouted as loudly as she could. It didn't cost her so much, as she feared.	*umaa avaLaal muTindta aLavukku urakka captamiTTaaL* *avaL kavalaippaTTatu pool atu avaLukku kuuTutalaana vilai alla.*
Comparative degree With comparative form *than* is used. Uma walks faster than Usha. Kannan screamed louder than I expected.	NP + NP-ai + viTa + Adv + V *umaa uSaavai viTa veekamaaka ndaTandtaaL* *ndaan etirpaarttatai viTa kaNNan kuukurliTTaan*
Superlative degree With superlative it is possible to use *of* + noun Usha worked hardest of the labourers.	NP + NP-il + Adv + V *uSaa veelaiyaaTkaLil kuuTutalaaka veelai ceytaaL*

5.3.5. Transfer of clausal co-ordination

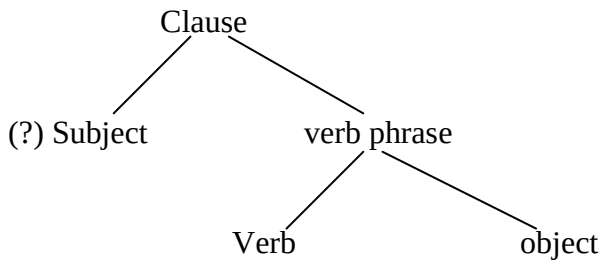
The following table depicts the points to noted while transferring coordination in English to Tamil.

English	**Tamil**
In expressing coordination, English being an SVO languages, place particles before the coordinated element, typically the last. ex. Mathematics, physics, chemistry and	Tamil as a SOV language, by contrast, place such particles after the coordinated elements. *kaNitamum, iyaRpiyalum, veetiyalum vilangkiyalum*

English	Tamil
zoology	'mathematics, physics, chemistry, and zoology'
Coordination is often accompanied by ellipses when two clauses are coordinated. Ex. Usha sat still and said nothing.	In this type of coordination, Tamil does not make use of the coordinator *um*. Instead it makes use subordination by verbal participle form. ex. *uSaa acaiyaamal uTkaarndtukoNTu onRum peecavillai.*

5.4. Transfer of sentences

English relies on word order as a means of expressing grammatical relationships within constructions. In Tamil, word order is more flexible, as grammatical relations are signaled by inflections. In generative linguistics, English with fixed word order is called configurational language and Tamil with fairly free word order is called non-configurational language. The core of the configurationality issue is about the question of special grammatical relation of subject and a different one of object, whatever these relations correspond to different positions in the hierarchy of the sentence. In Tamil, there is little or no evidence for a hierarchy as given below; but very often Tamil differentiates subjects and objects in crucial ways.



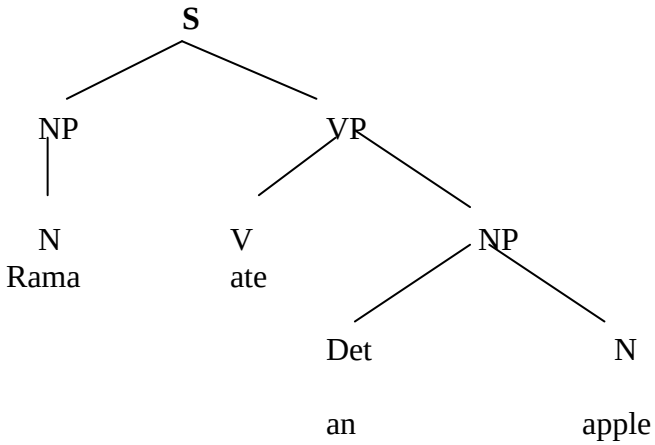
It has been taken for granted that in English there is a syntactic VP node. It is generally believed that Tamil lacks VP constituency. So generally Tamil sentences are given a flat structure without VP being at a different hierarchical level.

Subathra Ramachandran (1975) strongly argues that Tamil is a configurational language possessing a VP node. Even if it is true, we cannot compromise on the fact that

Tamil is different from English as English is an SVO language where as Tamil is an SOV language in which 'S' and 'O' can be shuffled. Tamil is not strictly a configurational language. The object is decided by position in English whereas in Tamil by case markers.

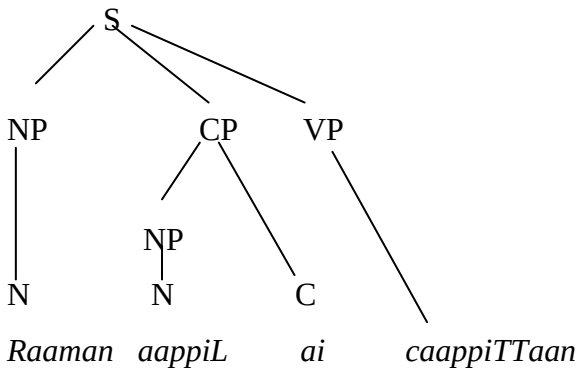
Rama ate an apple

English



Tamil

raaman aappiLaic caappiTTaan



Many interesting points will be revealed for the purpose of transferring English language structure into Tamil, if we look at the correlating features of the two languages from the point of view of their typological characteristics as SOV and SVO languages respectively.

1. Syntactically, English and Tamil are perhaps most saliently different in the basic word order of verb, subject, and object in simple declarative clauses. English is an SVO language, meaning that the verb tends to come between the

subject and object and Tamil is an SOV language, meaning that the verb tends to come at the end of basic clauses. So the two languages differ in their ordering of certain functional units. For example, English being an SVO language has prepositions, whereas Tamil being SOV language has postpositions.

2. The affirmative sentence in English which are in SVO order becomes aux + SVO to form interrogative sentences which is a discontinuous order. In Tamil, the interrogation does not change the word order.

3. English is a highly consistent SVO language. The government constructions observe SVO patterns, as do the nominal modifying constructions – with the exception of descriptive and limiting adjectives in an archaic order. As a consistent language, English exemplifies characteristic features of SVO languages, such as the many patterns that have been developed in the verbal modifying constructions, the wide use of substitutes, and the grammatical processes used to highlight elements of sentences. The verbal patterns make heavy use of auxiliaries, which are also involved as substitutes and in interrogative and negative constructions, differentiating English in this way from (S)OV languages like Tamil. The grammatical process involves function words, again in distinctive constructions like clefting.

Tamil is a typical (S)OV language in which the verb occurs at the final position of a sentence. Word order in the sentence is relatively free, as long as the sentence ends with a main verb. For example, the sentence *Kannan introduced Uma to Raja* in Tamil can have the following word-order variants.

3. *kaNNan umaavai raajavukku aRimukappaTuttinaan*.
4. *kaNNan raajaavukku umaavai aRimukappaTuttinaan*.
5. *umaavai raajaavukku kaNNan aRimukappaTuttinaan*.
6. *raajaavukku umaavai kaNNan aRimukappaTuttinaan*.
7. *raajaavukku kaNNan umaavai aRimukappaTuttinaan*.
8. *umaavai kaNNan raajavukku aRimukappaTuttinaan*.

ai and *kku* are accusative and dative case markers and nominative is unmarked in

Tamil. The above sentences are identical in logical content, but are different in discourse presupposition in a very subtle way. Ordinarily, constituents that represent older information precede those that represent newer information. The subject-initial sentence pattern is the most common among the various word order patterns. In declarative sentence with nominal subject and object, the dominant order is almost always one in which the subject precedes the object.

4. Simple, unmarked clauses in English agree with the SVO pattern, and require representations for the three constituents: subject, verb, and object. Neither the subject nor the verb nor the object of a transitive verb may be omitted.
Uma folded her hands.
*Her hands Uma folded.

5. English does not permit any order other than the above in unmarked sentences occurring as single utterances. This constraint applies also in subordination, as in the following sentence:
Kannan shouted while Uma folded her hands.

6. In English the verbal qualifiers must precede verbs. This position conflicts with the optimum position for subjects. To express negation, for example, the negative element might be prefixed to the verb.
Uma does not fold her hand.
*Uma folded not her hand.
In Tamil the negative element follows the verb.
umaa tan kaikaLai maTikkavillai 'Uma did not folded her hands'
**umaa tankaikaLai illai maTittaaL*

7. Government operates strongly in English, both in predicates and in other government constructions.
Her hands are folded.
Two of her hands are folded.
This is case with Tamil too.
avaL kaikaL maTikkappaTTana 'Her hands are folded'
avaL iru kaikaLum maTikkappaTTana 'Two of her hands are folded'

8. In comparison of inequality the adjective precedes the standard.
Uma is more beautiful than Usha.

9. In titles, the name follows, functioning like a standard for the 'variable' title.
Queen Uma.
Tamil allows both the possibilities.
raaNi umaa 'Queen Uma
umaa raaNi 'Queen Uma'
In personal names the surname follows as standard to the given name.
John F. Kennedy.

10. In numerals in the teens, the form of ten follows, as in the other constructions of this kind furnishing a standard for the simple numerals from three to nine.
Ex.
Thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen.
In Tamil the pattern is ten + numeral
ex.
patinonRu 'eleven', *panniraNTu* 'twelve', *patimuunRu* 'thirteen', *patinaanku* 'fourteen', *patinaindtu* 'fifteen', patinaaRu 'sixteen', patindeezhu 'seventeen', patineTTu 'eighteen', *pattonpatu* 'nineteen'

11. English has been characterized by functional syntacticians as a language in which the initial segment, or theme, often using old material, sets the scene for the new material, or rhyme.
Uma folded her hands.
The subject *Uma* is one of the important elements of the preceding discourse, while the predicate *folded her hands* introduces a new action. SVO order provides a convenient basis for such organization of sentences. The same can be said for Tamil too.
umaa tan kaikaLai maTittaaL 'Uma folded her hands'

12**.** For the basic sentential structures identified for English, the corresponding Tamil structures are given**.**

English	Tamil
SVA **Arul is in the reception hall**	**S AV** *aruL varaveeRpaRaiyil irukkiRaan*
SVC **Arul is clever**	**SCV** *aruL puticaali aavaan*
S V O **Arul threw the ball**	**S O V** *aruL pandtai eRindtaan*
SVOA Arul kept the ball on the table	**S O A V** *aruL pandtai meecai meel vaittan*
S V O C Arul has proved her wrong S V O IO Arul taught her music	**S *enRu*-clause V** *aruL avaL tavaRu enRu ndiruupittaan* 'AruL has proved that she is wrong' S IO O V *aruL avaLukku icai kaRpittaan*
SV The baby cried.	**SV** *kuzhandtai azhutatu*

(Here in this context A = Adjunct, C = Complement, IO = Indirect Object, O = Object S = Subject, V= Verb)

In both English and Tamil simple, compound and complex sentences have been identified traditionally.

Sentence type	**English**	**Tamil**
1. Simple sentence	He goes to market	*avan maarkeTTukkup pookiRaan*
2. Compound sentence	He went to market and bought some vegetables.	*avan maarkeTTukkup poonaan. kaaykaRikaLai vaangkinaan*.
3.Complex sentence	He is going to market to buy vegetable	a*van kaaykaRivaangka candtaikkup pookiRaan*

Though the distinction of sentences into simple, compound, complex is traditional, it is crucial from the point of view of translation. We can expect a simple sentence in the source language having an equivalent simple sentence in the target language. For example, for a simple sentence in English, we can expect a simple sentence as its translation equivalent in Tamil. Similarly for a compound sentence in English we can expect a compound sentence as its translation equivalent in Tamil. Also we can expect a complex sentence as a translation equivalent in Tamil for a complex sentence in English.

English	**Tamil**
He went to market NP V to-NP	*avan candtaikkup poonaan* NP NP-*ukku* V
He went to market and bought vegetable NP V to-NP and V NP	*avan candtaikkup poonaan maRRum kaaykaRikaL vaangkinaan*. NP NP-*ukku* V *maRRum* NP V
He went to market to buy vegetable. NP V to-NP V NP	*avan kaaykaRikaL vaangkac candtaikkup poonaan* NP V-INF NP-ukku V

But this idealization of getting translation equivalent as mentioned above may not be true always. One can expect a complex sentence for a simple sentence or vice versa.

English	Tamil
Arul has proved her wrong NP V NP Adj	*aruL avaL tavaRu enRu ndiruupittaan* 'AruL has proved that she is wrong' NP [NP NP]S *enRu* V

This complexity should be kept in mind while looking for translation equivalents of English sentences in Tamil.

Traditionally in both English and Tamil the following types of sentences are identified

Sentence type	**English sentence**	**Corresponding Tamil sentence**
Affirmative or assertive sentences	He went to market	*avan candtaikkup poonaan*
Question or interrogative sentences	Is he going to market?	*avan candtaikkup pookiRaana*?
Negative sentences	He is not going to market	*avan candtaikkup pookavillai*
Imperative or command sentences	Go to market	*candtaikkup poo*
Exclamatory sentences	How beautiful the building is!	*aa! evvaLavu azhakaana kaTTiTam itu!*

This functional distinction of sentences is also crucial to our venture in finding translation equivalents in Tamil for English sentences. It should also be noted that the word order plays a crucial part in converting affirmative sentences into interrogative sentences in English. In Tamil word order does not play a crucial role while transforming an affirmative into an interrogative sentences, it makes use of clitics.

5.4.1. Transfer of affirmative sentences

English has an explicit link verb (‘be’ verb) to equate the subject NP with the complement, NP, Adj. and Adv. Explicit link verb is lacking in Tamil. But there are contexts in which we make use of `be' verb which can be equated with English ‘be’ verb. The ‘be’ verb *iru* can complement an NP through an adverbial particle *aaka*.

avaL oru maruttuvaraaka irukkiRaaL
She one doctor_ADVPAR be_PRES_PNG
‘She is a doctor’
avaL azhakaaka irukkiRaaL
She beauty_ADVPAR be_PRES_PNG
‘She is beautiful’
avaL cennaiyil irukkiRaaL
she Chennai_LOC be_PRESPNG

'She is in Chennai'

Adjective in Tamil cannot occupy the predicate position as in English. (In English adjective is supported by the 'be' verb). In Tamil *aaka* helps in the formation of an adjective when followed by the verb *iru*. The following table will depict the mechanism of transfer of equative sentences in English into Tamil.

Structure of English equative sentences	**The corresponding structure of Tamil equative sentences**
NP+ 'Be' verb + NP Kala is a girl	NP + NP *kalaa oru ciRumi*
NP + 'Be' verb + NP Kamala is a doctor	NP + NP-aaka + iru-T-PNG *kamalaa maruttuvaraaka irukkiRaaL*
NP + Be verb + Adj. Kamala is beautiful	NP + NP-aaka + iru-T- PNG *kamala azhakaaka irukkiRaaL* **NP + NP-aana-PN** *kamalaa azhakaanavaL*
NP + Be verb + Adv. Kamala is there	NP + Adv. + iru-T-PNG *kamalaa angkee irukkiRaaL*
NP + Become + NP Kamala became a teacher	NP + NP + aaku-T-PNG *kamalaa aaciriyar aanaaL*

In Tamil, the equative sentences of NP + NP type are used in the present context. If the equation is made in the future and past contexts, Tamil needs the help of 'be' verb *iru* which can be inflected for past and future.

Kamalaa oru maruttuvar
Kamala one doctor
'Kamala is a doctor'

Kamalaa oru maruttuvaraaka irundtaaL
Kamala one doctor_ADVPAR be_PAST_PNG
'Kamala was a doctor'

Kamalaa oru maruttuvaraaka iruppaaL
Kamala one doctor_ADVPAR be_PAST_PNG

'Kamalaa will be/may be a doctor'

5.4.2. Transfer of interrogative sentences

An auxiliary is preposed before the subject to express interrogation in English.

Did he come yesterday?

Do cats eat bats?

Such questions, as we noted already, require an answer of either yes or no, and as a result they are often labeled yes-or-no-questions.

In accordance with the general principle, the interrogative marker should stand close to the sentence boundary, whether initially in VO languages or finally in OV languages. English makes use of a special set of words which may combine with the interrogative with a substitute for the subject, the so-called wh-words. For yes-or-no questions it has lead to the introduction of auxiliaries. Among the auxiliaries *do* is the most remarkable in having today only a grammatical function, whether as interrogative marker or as a device for the indication of negation or emphasis. Other auxiliaries combine uses as grammatical markers with expression of modality, aspect, and tense.

The second set of questions in languages is characterized by a question word. These often referred as wh-question words after wh-segment in many English interrogative words, because they include an 'unknown quantity'. Initial position of the interrogative element accords with the expectation of this order for the theme as well as with the general ordering principle.

What's the French word for cuckoo?

What right has you to call me uncle?

How is bread made?

English, as an SVO language, permits only one wh-word before finite verb, whether this is a noun, an adjective, or an adverb.

Besides wh-questions and yes-or-no questions, English includes devices indicating presupposition in yes-or-no question. One such device is tag question, consisting of a positive auxiliary when a negative answer is presupposed, and a negative auxiliary for a presupposed positive answer. The auxiliary corresponds in form to that of the principal verb, as in the following idiosyncratic statement.

I speak English, don't I?

Interrogative expressions are then closely related to expressions for sentence negation, though negation may be used for syntactic rather than pragmatic purpose.

The three types of interrogation found in English have to be correlated with that of Tamil for the purpose of developing MTA.

5.4.2.1. Transfer of yes-no questions

Contrasting characters pertinent to the transfer of yes-no questions in English into Tamil needs close scrutiny. As we have already noted, the yes-no questions can be sub divided into three types in English:

1. Those with ‘be’ verb
2. Those with ‘modal’ auxiliary.
3. Those with ‘do’ verb

The table below correlates the question with 'be' verb in English with Tamil.

English pattern	**The corresponding Tamil pattern**	**Comments**
1.Question with *be* verb 1.1.Be + NP + NP Is she a teacher? 1.2.Be n’t + NP + NP Isn’t she a teacher? 1.3.Be + NP + Adj. Is she beautiful?	1.1.NP +NP–aa *avaL oru aaciriyaraa*? 1..2.NP + NP + allav/illaiy-aa? avaL aaciriyar allav/ilaiy-aa 1.3.NP + NP-aana-PNG-aa avaL azhakaanavaLaa?	In the case of negative sentence with *not*, the short form *n’t* will be placed after the 'be' verb. The movement of English 'be' verb to the initial position is matched by adding of

English pattern	**The corresponding Tamil pattern**	**Comments**
		clitic *aa* in Tamil
2.Question with *modal* auxiliary 2.1.Modal + NP + Main verb + (NP) Can he be a doctor? 2.2.Modal +NP+V Can I sing? Should I write?	NP-*aal* + NP-*aaka* + *iru* + Modal-*aa* *avanaal maruttuvaraaka irukka muTiyumaa*? NP-*aal* +V-INF + Modal-*aa* *ennaal paaTa muTiyumaa*? *ndaan ezhuta veeNTumaa*?	
3.Question with *do* verb 3.1.DO + Tense + NP + V + (NP) Did write the story? 3.2.Don't + Tense + NP + V + (NP) Didn't Rani write the story?	3.1.NP + (NP) + V-T-PNG-aa *raaNi katai ezhutinaaLaa?* 3.2.NP + (NP) + V-INF *iilaiy-aa* *raaNi katai ezhutavillaiyaa?*	The movement of English *do* to the initial position (or do insertion) is matched by adding of clitic *aa* in Tamil

Interestingly to trigger all the three types of interrogation in English, Tamil makes use of the clitic *aa* with the relevant units. It can be summarized that for the question type in English where the 'be' verbs such as *is, am, was, are, were, will be, shall be* are preposed to the subject to frame questions, we can expect two types of equivalents in Tamil.

The interrogative structure of type 'be' verb + NP + NP' in English will be matched by 'NP + NP- *aa'* in Tamil.

Is she a girl?
avaL oru ciRumiyaa?

For the interrogative structure of the type ''be' verb + NP + Adj' in English, Tamil makes use of NP + [NP-*aana*]Adj-PN-*aa*. Note that in Tamil adjective is pronominalized when it

is used as a predicate.

Is she beautiful?
avaL azakaanavaLaa?
Is he poor?
avan eezhaiyaa?

The yes-no question of the type ''be' verb + NP + Adv' in English is matched by 'NP + Adv + *iru*-T-PNG-*aa'* in Tamil.

Is he here?
avan inkee irukkiRaanaa?

5.4.2.2. Transfer of wh-questions

The 'wh' questions of Tamil are similar to 'wh' questions in English. As in English, interrogative pronouns, adverbs, etc in Tamil introduce them. Since the word order is flexible the question word can be introduced anywhere in the sentence. As we have noticed already, English question sentences are formed by the movement of the operator verb followed by the movement of interrogative words (noun, adverb, adjective). Tamil does not have operators to be fronted although it has counterparts for 'wh' words in English. These counterparts do not move to the front of the clauses. As we noted already 'yes/no' questions in Tamil differ from their declarative counterparts by suffixing a clitic to the concerned elements to be questioned.

The following table shows the correspondence between interrogative words in English and Tamil.

Interrogative words in English	**Interrogative words in Tamil**
Who	*yaar, evan, evaL, evar*
Which, what	*etu, evai, enna*
How much	*evvaLavu*
How many	*ettanai*
How	*eppaTi, evvaaRu*

Interrogative words in English	**Interrogative words in Tamil**
Where	*engku*
When	*eppootu, eppozhutu*
At what (time) On which (day)	*endndeeram, eppootu* *e(endaaL), enRu,*
At what (place) In which (town) To which (country)	*engkee* *e(endakaril)* *e(endaaTTil)*
By whom With whom With which (friends) Whose (house)	*yaaraal* *yaaruTan* *enta (ndaNparkaLuTan)* *yaaruTaiya (viiTu)*
Why	*een, etaRku*

The following table shows the correspondence between interrogation in English and Tamil.

Interrogation in English	**Interrogation in Tamil**
In English interrogation is framed by shifting the auxiliary verbs to the initial position of the construction or by introducing the interrogative words or by adding superasegmental morphemes to any statement.	Interrogation is framed by the addition of interrogative particles or by the introduction of interrogative words or by adding suprasegmental morphemes to any statement.
Interrogation framed by auxiliary for yes-or-no type.	Interrogation is framed by interrogative particles for yes-or-no type.
In English the auxiliary verbs and the interrogative words occur in the initial position.	In Tamil the interrogative particles occur in the final position of any word in the construction, the interrogative words occur in the initial, medial or final position of the construction.
Tag questions are framed by auxiliary	Tag questions are framed by suffixing

Interrogation in English	Interrogation in Tamil
movement.	the interrogative clitic the concerned units.
In interrogative sentences, interrogative words occur in isolation.	In Tamil too, the interrogative words occur in isolation in interrogative sentences.

5.4.3. Transfer of negative sentences

Under this title the transfer of negation in equvative sentences and non-equvative sentences and transfer of negative pronouns and determiners are dealt here.

5.4.3.1. Transfer of negation in equvative sentences

In the following table, negation in equvative sentences in English is correlated with that of Tamil.

English	Tamil
NP+ BE-V + not + NP She is not a school teacher.	**NP + NP + *illai*** ***avaL oru paLLi aaciriyar illai***
There + BE- V + no + NP There is no God.	NP + *illai* *kaTavuL illai*
NP + BE-V + not + PP He is not in Chennai.	NP– LOC + *illai* *avan cennaiyil illai*
There + BE-V+ no + NP There are no girls.	*angkee* + NP + *illai* *angkee maaNavikaL yaarum Illai*
It + is + not +ADJ– to-clause It is not easy to go there.	S-*atu* + adjectival noun + *alla /illai* *angkee poovatu eLitalla/ eLitu illai*

5.4.3.2. Transfer of negation in non-equative sentence types

In the following table, negation in non-equvative sentences in English is correlated with that of Tamil.

English Negative forms	**Corresponding Tamil forms**
Did not +MV1 He did not go	MV-INF + *illai* *avan pookavillai*
Does not + MV1 He does not go	MV-atu + *illai* *avan poovatillai*
Cannot + MV1 I cannot go	MV-INF+ *iyalaatu / muTiyaatu* *ennaal pooka iyalaatu / muTiyaatu*
Could + MV1 I could not go	MV-INF + *iyalavillai/muTiyavillai* *ennaal pooka iyalavillai / muTiyavillai*
Shall not + MV1 I shall not go	MV-INF + maaTTu + PNG / *muTiyaatu* *ndaan pooka maaTTeen*
Should not + MV1 I should not go	MV-INF + *kuuTaatu* *ndaan pookak kuuTaatu*
Will not + MV1 I will not go	MV-INF + *maaTTu* + PNG *ndaan pooka maaTTeen*
Would not + MV1 I would not go	MV-INF + *maaTTu* + PNG *ndaan pooka maaTTeen*
Will not + MV1 It will not go.	MV–*aatu* *atu pookaatu*
Must not + MV I must not go	MV-INF+ *kuuTaatu* ndaan pooka kuuTaatu

5.4.3.3. Transfer of negative pronouns and determiners

English makes use of negative pronouns such as *none , nothing, neither, nobody, none* and negative determiner *no*. Tamil does not have negative pronouns; instead it makes use of *um*-suffixed interrogative pronouns such as *yaarum, etuvum, evarum* which do not posses any negative feature; the negation is expressed by adding *illai* to the verb.

Negative pronouns in English	*Corresponding pronouns in Tamil*
1. Person = no one, nobody ex. No one come Nobody come.	*yaarum* ex. *yaarum varavillai.*
2.Non-person = nothing ex. I ate nothing.	*onRum* ex. *ndaan onRum caappiTavillai.*
3.None Ex. None of the students is good. None of the students here arrived.	*oruvarum/yaarum* ex. *maaNavarkaLil oruvarum nallavarillai* *maaNavarkaLil yaarum varavillai.*

Tamil does not have a negative word equivalent to addition adverbial negative form *neither…nor.* Tamil makes use of negative verb form such as *illai, muTi, kuuTaatu*, V-*aatu*. The noun phrases or pronouns will be added with the disjunct clitic *oo*. Similarly Tamil does not have the equivalent of *never* which is a negative adverb. Tamil makes use of Gerundive form of the type V-T/N-atu.

English	**Tamil**
Neither… nor Neither Usha nor Uma came today	NP–oo NP-oo MV-INF + illai *uSaavoo umaavoo inRu varavillai*
Never Never I met him	V-T-RP-atu+ illai *ndaan avanai candtittatillai* Note: The adverb *orupootum* which can be equated with English *never* also need the support of the negative verb *illai*. *orupootum* can be compensated by the emphatic clitic *ee* added to the VN. *ndaan avanai orupootum candittatillai.* *ndaan avanai cantittatee illai.*

The following table sums up the correlative features of English and Tamil for the sake of computation.

Negation in English	**Negation in Tamil**
Negation is effected by the addition of segmental words or suprasegmental morphemes to the affirmative construction.	In Tamil too, negation is effected by the same method.
Forms like *no, not, nothing, nobody, none, not only, rarely, scarcely, seldom, few, little,* etc. are the negative words which are used to bring in negation.	The negative roots *al, il, maaTTu* are the negative words which bring out negation in Tamil
The negative words do not show concord with the subject of the negative construction	Except the negative verbs *alla* and *illai*, all other inflected negative words (ex. *maaTTu*) show concord with the subject of the negative construction.
Monomorphemic negative words in pure negative constructions occur with auxiliary verbs and others occur without any auxiliary verbs.	The negative words follow the nouns, a few adverbs or the infinitives.
The negative words in pure negative constructions occur in the initial position of the construction.	The negative words in near negative constructions occur in the medial position.
A construction with a main verb can be negated only after introducing an auxiliary verb.	
The monomorphemic negative word in pure negative constructions is moved with the auxiliaries to form negative interrogative constructions whereas the negative words in near negative constructions are not moved with the auxiliaries.	

5.4.4. Transfer of imperative

Imperative sentences, as we noted already, are associated mostly with the second

person commands, instructions and requisitions. Both Tamil and English make use of verb root to express imperation. As English does not have overtly marked separate terms for singular and plural second persons and the verbs do not inflect for subject, it does not have separate verbal form for singular imperative and plural imperative. As Tamil has two or three distinct second person pronouns, one expressing singular (*ndii*), another expressing plural (*ndiir*) and honorific (*ndiingkaL*), it reflects this distinction in the imperative forms of verbs too. So, for English *you*, depending upon the context, Tamil may have at least two forms, one is verbal root and another is 'verb root + *ungkaL*'. The following table correlates different ways of bringing imperative sense in English and Tamil:

Imperative type	**English pattern**	**Corresponding Tamil pattern**
Imperative positive	***Non honorific:*** ***V1 (i.e. verb root)*** Go ***Emphasis: Do + V1*** Do go ***Honorific*** ***Please + V1*** Please go ***Be + adjectival compliment*** Be quiet Be serious Be seated	Imperative singular: Verb root *poo* ***V-Past participle* + viTu /koL** *pooyviTu, pooykkoL* Imperative plural / honorific Verb root + ungkaL poongkaL ***N*-aaka +iru** *amaitiyaay iru* *kavanamaaka iru* *uTkaarungkaL*
Imperative negative	***Don't + V1*** Don't go Don't sit	***Verb root* –aat- ee** *Pookaatee* *UTkaaraatee*
Let command	Let + object pronoun (1st & 3rd)/ Proper noun + V1 Let him go	Sub (1st & 3rd person) /Proper noun + V-INF-*aTTum*

Imperative type	**English pattern**	**Corresponding Tamil pattern**
	Let me go Let Rama go	*avan pookaTTum* ***ndaan pookaTTum*** *raaman pookaTTum*
Positive *should* command	2nd person + should + V1 You should go	Sub (all three persons) + V-INF + *veeNTum* *ndii pooka veeNTum*
Negative *should* command	Sub (all three persons) + should not + V1 I should not go	Sub (all three persons) + V-INF + *kuuTaatu* *ndaan pookak kuuTaatu*
Positive *must* command	2nd person All person + must + V1 You must go	Sub (all person) + V-INF
Negative *must* command	Sub (all three persons) + must not + V1 You must not go	Sub (all three persons) + V-INF + *kuuTaatu* *ndii/ndiingkaL pookak kuuTaatu*
Positive *has to/ have to* command	Sub (all three persons) + has to/have to + V1 + You have to go He has to go	Sub (all three persons) + V-INF *ndaan pooka veeNTi irukkum* av*an pooka veeNTi irukkum*
Negative *have to* command	Sub (all three persons) + don't/doesn't have to + V1 I don't have to go He doesn't have to go	Sub (all three persons) + V-INF + *veeNTiyirukkaatu* *ndaan pooka veeNTi irukkaatu* *avan pooka veeNTi irukkaatu*

Imperative type	**English pattern**	**Corresponding Tamil pattern**
Positive *need* command	Sub (all three persons) + need + infinitive He need to go	Sub (all three persons) + V-INF + *veeNTum* *ndii pooka veeNTum*
Negative *need* command	Sub (all three persons) + need not + V1 He need not go	Sub (all three persons) + V-INF + *veeNTaam* *ndii pooka veeNTaam*

5.5. Summary

The mechanism of transferring English sentences into Tamil has been explored by correlating the syntactic structures of the two languages. The correlative study tried to explore the commonalities and differences in the structure of English and Tamil from the point of view of computation to build a machine translation aid to translate English into Tamil. It has been noticed that the two language deviate from one another from the point of view of English as language of SVO and Tamil as language of SOV, i.e. verb final language. While English makes use of preposition to link nominal arguments with verbs, Tamil makes use of postposition and case markers to serve the same purpose. The absence of regular case inflection in the case of English makes it rigid in its word order and the presence of case inflection in Tamil makes it more flexible in its word order. English distinguishes subject form object by means of the position, i.e. word order, where as Tamil does it by case inflection. Relative clause in English is after the head noun which is attributed and in Tamil it comes before the head noun. The infinitive clause in English comes after the main clause, whereas in Tamil it is comes before the main clause. That-clause complement occurs at the right side of the main clause in English, whereas it occurs at the left side of the main clause in Tamil. Interrogation is effected by changing the order of the words, i.e. by moving an auxiliary verb to the initial position before subject. In Tamil interrogation is effected by suffixing interrogative clitic or by making use of interrogative pronouns. In English, the auxiliary verbs and the interrogative words occur in the initial position of the construction. In Tamil, the interrogative particles occur in the final position of any word in the construction.

All these correlative features have to taken into account while marking transfer module to restructure English as per Tamil sentential structure.

CHAPTER 6

6. LANGUAGE OF LINGUISTICS

6.0. Prelude

The language of linguistics like language of pure and applied sciences has to be identified as something unique from the point of view of selection of words and their meaning, selection of phrases and sentences and content which is mostly about the structure of language. This can be collectively called style of linguistics. This uniqueness in the style of linguistics has to be exploited while transferring the information found in linguistics books in English into Tamil. A text form "Aspects of theory of syntax (ATS)" by Noam Chomsky is taken for building a model for the MTA proposed here. The language of ATS has been thoroughly studied and the technical terms have been incorporated in the glossary. The following observations about the language of linguistics are based on the linguistic textbooks in general and ATS in particular. The language of linguistics has been thoroughly studied from the point of view of preference of style, words and their meaning.

6.1. Advantage in selecting domain specific language

The MTA is going to work on a domain specific language. We are going to take up only linguistics for preparing MTA. That means many problems that arise while translating language of literature and language of science can be avoided. Though linguistics is a scientific study of language, one cannot forget the fact that it is a discipline that comes under social sciences. The deliberate way of making ambiguity as a means of expression, flowery language, metaphorical and idiomatic usage has been drastically reduced in the language of linguistics.

6.1.1. Relief from polysemy

The language of linguistics is generally plain and straightforward. Words are mostly monosemous, i.e. having only one interpretation; polysemy i.e. having more than one interpretation for a word is very much discouraged. The possibility of getting many translation equivalents for a sentence has been very much under control. These characteristics of linguistics have been taken into account while preparing the English-Tamil lexical transfer dictionaries meant for transferring information in linguistic books

in English into Tamil. The metaphorical and idiomatic sense has been very much reduced.

The word morphology denotes a branch of biology but in linguistics it is study of structure of words. Many technical words borrowed from biology and other disciplines to Linguistics have their own linguistic sense. So the domain specific dictionary for translation can be very much controlled and the complexity in the interpretation of meaning can very well be tackled. The word *property* in its ordinary sense denotes 'a thing or things belonging to some one'. But in linguistics it mostly means 'characteristics of something'.

6.1.2. Ambiguity under control

Ambiguity is a menace to machine translation. Translation by machine will be ideal if the parser produces only one parsed structure for each sentence. If there are more than one parsed structure for a sentence, that will be reflected in the translation of source sentence into target sentence. Different parsed structure in source language gives rise to different transfer structures in the target language. Ambiguity can be pinpointed as the main reason for different parsed structures. Ambiguity, as we under stand, refers to a word or sentence that expresses more than one meaning. Several types of ambiguities are recognized. The mostly known are lexical and grammatical or structural ambiguity. In phrase structure ambiguity is attributed to alternative constituent structure that can be assigned to construction. For example, the phrase *new houses and shops* can be analysed in two ways:

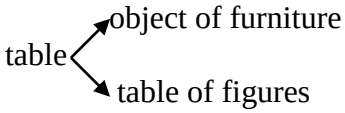
new[houses and shops] = both houses and shops are new
[new houses] and shops = only houses are new

In transformational grammar ambiguity is assigned to alternative semantic representation. For example, the sentence '*Visiting speakers can be awful.*' can be interpreted in the following ways.

1. It is awful to visit speakers.
2. Speakers who visit are awful.

A sentence with more than two structural interpretations is said to be multiply ambiguous. An analysis that demonstrates the ambiguity in a sentence is said to disambiguate the sentence. The analysis of ATS reveals that this kind of structural ambiguity is very much under control. Of course, many ambiguous sentences are given for explaining the theory. The sentences have to be tackled separately. They come under untranslatable text.

Ambiguity, which does not arise from the grammatical analysis of a sentence, but is due solely to the alternative meanings of an individual lexical item, is referred as lexical ambiguity. For example, the sentence, *'I found the table fascinating*.' is ambiguous due to polysemy of the lexical item *table*.



Multiple meanings of lexical items is one of the potential areas where could be bias in translation. It is characteristic of words that a single lexical item may have several meanings other than which most readily recognized by us, which are usually called secondary meanings. Primary meanings are those suggested by the word when they are used alone. It is the first meaning that a word will suggest to most people when the word is said in isolation. In a domain specific text, which is on linguistics, the primary meaning of a lexical item may differ from the primary meaning of a lexical item in ordinary language. An electronic dictionary for translating Linguistic textbooks in English into Tamil is prepared having this idea in mind. For example, the primary meaning of the word *property* in ordinary language is 'that one owns' but in linguistics it means 'characteristics'. The technical sense of the lexical items such as *deep structure* and *surface structure* are very much different from the sense in ordinary language. Since polysemy is under control because of the domain specific nature of the text under translation, the different interpretation due to lexical ambiguity is very much minimised. For example, *table* in linguistics generally indicates table of figures.

6.1.3. Accounting the agreement

The agreement does not pose any problem while translating linguistic books into

Tamil as linguistic statements are mostly impersonal. The adding of PNG markers at the end of the finite verbs need not be a problem as we are going to have only *atu*, a*n*a, (*um*)+ϕ, *aar* and *aarkaL*, as there is no need of distinguishing between *he* and *she* of English in Tamil while representing them as PNG markers. Because of the characteristic feature of the language of Linguistics, it is enough to make use of *atu, ana, aar or aarkaL* to mark subject.

6.2. Characteristic features of language of linguistic text books

It is difficult to arrive at the characteristic features of language used in linguistic textbooks as they are written by different authors and at different periods of time. The style will be simple if the textbook is written for college students and will be complex if it is of ATS type. But one can certainly think of a unique style for linguistics from the point of view of selection of lexical items, phrases and sentence patterns of Linguistics, which is a scientific study of language, mainly aims to describe the characteristic features of language in general and a language in particular. The subject matter of linguistics is about language. Incidentally a particular language is used to describe about it. So it becomes a must to develop a metalanguage to describe about the language in general. In this process many ordinary words are raised to the level of metalanguage. Grammar is nothing but a metalanguage to describe about the structure of a language. So the language of linguistics became unique in its structure and selection of vocabulary. It is this unique feature of language of linguistics that has been attempted here to capture.

6.2.1. Uniqueness in lexical items

As mentioned earlier, the language of linguistics is straight-forward when compared to the language of literature. Linguistics being a social science differs from literature and pure science in terms of selection of vocabulary. Certainly one can expect linguistic jargons. Especially in a text form ATS one can expect linguistic jargons which are mostly concerned about grammar. The words such as *grammar, transformation, structure, deep structure, surface structure, generative, component, features, theory,* etc are frequently found in ATS. Any general text book or introductory text book on linguistics make use of words such as *morphology, syntax, semantics, phrase, clause,*

structure, morpheme, phoneme, etc. For this reason a separate electronic technical dictionary is prepared for translation from English into Tamil. This will supplement the English-Tamil bilingual dictionary.

A technical term generally replaces long phrases, or even a complicated discourse. It's meaning is fixed by an agreement or definition, which in linguistics receives explicit formulation and strict adherence. There are certain qualities a term is expected to have in linguistics. These include brevity, lack of ambiguity (one term for one and the same concept), accuracy, meaningfulness through structural composition, simplicity in structure, euphony, international usage and capacity to form derivations with ease. Generally speaking, pursuit for a term begins after the identification of concept. Identification of a concept involves demarcation of its boundaries to distinguish it from allied and/or opposed concepts and of the relationship that exists between the components that go into the making of the concept. A term is also a lexical item in the sense that it can be assigned to word classes (parts of speech) of a language, and can have various syntactic relations like ordinary lexical items. Because of this unique nature of technical terms in linguistics, they are identified and kept separately in glossary form for translation.

6.2.2. Uniqueness in phrase structure

Most of the sentences found in ATS are statement addressed to the general readers who are practicing linguistics. Simple sentences representing the simple structure SVO is almost not found in ATS. Almost all the sentences are complex in nature. Sentences with subordinate and coordinate clauses are found frequently. The sentences are usually longer having 30 to 35 words. There are many sentences starts with conditional clause having *if*.

If a sentence such as...

There are many sentences beginning with subordinate clause carrying subordinate conjunctions such as *although, even though, though*, etc. Linking adverbs such as in *addition, also, moreover, otherwise, however, nevertheless, on the other hand, therefore, mean while, etc*. are extensively used. These sentences have to be transferred to Tamil with utmost care.

The TAM system is simple. Simple tenses and perfect tenses are mostly used. This makes the transfer across the language easy.

6.2.3. Unique characteristics of linguistic discourse

Language can be studied in several ways – as sociological, psychological, biological or linguistic phenomena. Within linguistics, one may look at language from the point of view of at least the following eight components:

1. Phonetics
2. Phonemics
3. Morphology
4. Morphophonemics
5. syntax
6. Semantics
7. Lexis
8. Graphemics

One may study the language in relation to the content, context, and pursuit of its users. A study of language, in fact, is not generally based on any one of the factors to the exclusion of others – the study generally takes into account a few of the factors together and a comprehensive study aims at including all the above in some proportionate manner dictated by the goals and necessities of the investigator.

Language of linguistics, unlike the ordinary language, is hardly ever emotive; it is generally informative and symbolic. But its construction and composition follow the process of ordinary language. Like the sentences of ordinary language, sentences of Linguistics also may have qualities that may not be wholly ascribed to the words that the sentences have. Composition of sentences in all languages involves selection of words and selection of arrangement into which these words is decided upon first. In any case, there are several alternatives of arrangements and of words available to the users to make a decision, and the capacity for making appropriate decisions varies from one to another. It also varies on the basis of the content, context and pursuit. Note however, that alternative as regards the items of language of linguistics are of a limited number and

nature.

We do not speak or write sentences in isolation. The sentences we utter or write are generally a part of a larger whole called discourse – a cluster of sentences with a focus on a single topic, generally speaking, which is intuitively felt as forming a unit by itself. Thus, a sentence has not only its own internal network of relations formed by the words, phrases, and even embedded sentences that go into its making but also it has its own external relations when it occurs in a particular discourse. These external relations between sentences in a text or discourse are signalled both by linguistic and nonlinguistic means. Several linguistic devices are employed by us to perform the following:

1. to refer back to what has been already suggested,
2. to suggest that what is being presented in a particular sentence is a logical follow-up of what has been presented in preceding sentences,
3. to point out what is being presented in a particular sentence is simply going to be contradicted later and so on.

Coherence and cogency, readability and to some extent comprehensibility may dependent both on the linguistic and nonlinguistic characteristics of the discourse. Thus, the external relations of the above sort that exist between sentences in a linguistic text should also be considered as part of the characteristics of the language of linguistics, in addition to a study of the relation between syntax and lexis (lexical items and their use). A study of language of linguistics will be enriched not by comparing one style of language of linguistics with another style, one functional language with another, but also by a comparison of the same with the spoken/colloquial language. That is the language of linguistics should be compared within a language across levels of communication and levels of education. Such comparisons will lead to insights into the functions attached to varieties of a language and this insight should be of great use for the understanding of language of linguistics.

6.2.3.1. Subordination and coordination in discourse

The subordinate clause is an internal relation and, thus contains information that is

subsumed by the information carried by the main clause of the whole sentence. Generally speaking, it is the information that is carried by the main clause, which is used to establish the communication bridge with other sentences in a discourse. However, while the main clause of a sentence carries the information and acts as the bridge in most of the cases, the subordinate clause is not precluded from having such relations in the discourse. In all the cases, however, a complete understanding is achieved in a discourse on the basis of the understanding of other sentences of the discourse. This is much more so in a linguistic text because sentence in a linguistic text is there in the text because of the information it carries and not for any ornamental purpose. The sentence has its own information, which, however, forms part of the whole in some specific and clear manner.

A discourse has something coherent about it. Some of the features that contribute the cohesion of a text or speech are the following:

1. juxtaposition of sentences or parts of sentences
2. the presuppositions shared by a writer and a reader, speaker and a listener
3. repetition of items
4. use of synonymous items
5. anaphoric references, and so on.

Juxtaposition of sentences by itself does not contribute to cohesion of a text. The grammatical concepts of coordination and subordination may be considered as part of juxtaposition of sentences themselves. In co-ordination we juxtapose two or more identical grammatical structures. Conjunction, which connects parts of the sentence plays a crucial role here. Subordination helps us to build up the qualifications of the head in addition to fulfilling several other functions. Conjunction between sentences is an important step in bringing out the cohesion between sentences in a text. This connection is found to be of several types in a linguistic text book in English. The most frequent ones are listed below:

1. the logical sequences

ex. *thus, therefore*

2. the contrast versus non-contrast

ex. *however, in fact*

3. the doubt versus certainty

ex. probably versus certainly

4. the non-contrast versus contrast

ex. *moreover, similarly, also*

5. the expansion of detail

ex. *for example, in particular*

Some of the salient features of linguistic texts with regard to the discourse cohesion are listed below:

1.It has been found by our study of linguistic texts that within this sequence of sentences instrument relation (*thus*) and deduction or reason relation (*therefore*) have a greater frequency in scientific texts.

2. The contrast sentence connectives are used to make explicit a contrast or an incompatibility between their clauses. These include the following items:

however, in fact, yet, nevertheless

Out of these items, the frequency of *however* is found way ahead of the rest.

3. The sentence connectives of doubt and certainty include the following:

1. The connectives expressing doubt are

probably, apparently, perhaps, presumably

2. The connectives expressing certainty are

of course, clearly, actually

These sentence connectives are non-anaphoric (not having back-reference, generally speaking) and they do not make explicit a particular clause relation for their sentence, but can strongly predict a contrast relation for it. What they do make explicit is a subjective attitude of doubt or certainty and it is this subjectivity itself which can predict a contrast relation as an intellectual balancing of statements where tentative is balanced by certainty, or certainty by tentative.

4. The sentence connectives of non-contrast are the semantic converse of the contrast items in the category of the contrast sentence connectives. These make explicit a relation of non-contrast or compatibility. These include the following items:

moreover, similarly, also, indeed, in addition

6.2.3.2. Anaphora

Anaphora is an important aspect of discourse. It may be defined as a type of dependency in a sentence when one of its elements refers back to an earlier sentence (or information contained therein) in some manner. Even within the same sentence one can have anaphoric reference. Reflexives are generally anaphoric within sentences. One can refer back to an earlier sentence through the use of pronouns, articles, demonstratives, adverbials of place, and through a process of ellipsis. It is noticed that certain forms and kinds of discourse may exhibit some preference for certain kinds of anaphoric devices over others. The maintenance of internal cohesion of any discourse is necessitated first of all the need to be understood. The dependencies must be viewed form this angle. If one resorts to an excessive use of anaphoric devices, it is likely to affect comprehension.

6.2.3.3. Other features of discourse

There are a few other features such as the following which also contribute to the internal cohesion in a discourse:

1. presupposition
2. paraphrase
3. lexical organization of sentences

6.2.3.3.1. Presupposition

Presuppositions are carried by certain statements, questions, etc. Presupposition

need not be considered only from the angle of shared information between the communicators but also from the angle it gets reflected in linguistic structure. The chosen syntactic patterns and lexical items combine to express the presupposition of the writer and the speaker. The linguistic philosophers have devoted considerable attention to the problem of presupposition and expend their energies to separate the content-presupposition from the linguistic presupposition. Linguists also expend a considerable attention to debate the extent to which the implications of the notion of presupposition should form part of the linguistic description of a language. Be as it may, but the language of linguistics are expected to be free from presupposed statements. It is required to make what is being presupposed as explicit as possible. Hence the language of linguistics is expected to be explicit and straightforward.

6.2.3.3.2. Paraphrase

Paraphrases enable us to use, in the place of using pronouns for subsequent references, noun phrases, which can hold paraphrase relations with the subject of the discourse. The technique of cohesion or, rather, a stylistic device, is generally avoided in the language of linguistics, unless the writer prefers to highlight certain particular aspect of the subject referred to.

6.2.3.3.3. Lexical organization of sentences

The connections between lexical items in successive sentences also bring in cohesion in a discourse. There need not be explicit syntactic device to indicate the cohesion between sentences. But certain words give a sense of continuation and the flow from one sentence to another is marked by the choice of lexical items from more or less the same set. The anaphoric references need not be identified only at the syntactic level through an identification of linking morphemes, phases, subordinate clauses, etc. There is another anaphora, semantic anaphora, which is exemplified in the use of items from the same set.

6.2.3.3.4. Paragraph

An important segment of discourse is paragraph. Some consider it only as a form

of punctuation, having only the function of giving relief to the tiring eye. But a paragraph has more to it than meets the eye. An ideal paragraph has several functions to perform which include, among other things, its usefulness to indicate the various stages in an exposition, as a prop to the reader to comprehend and retain information and better organize what is being comprehended and retained for easy retrieval and its usefulness in moving forward the communicative content. If the thought is coherent, paragraph will have greater coherence. But even when the thought is coherent, if it is not matched by appropriate linguistic structures, the paragraph may not reveal any coherence at all. Word links alone cannot give as sense of coherence to the content of paragraph – especially so in a linguistic text. There is a general theme which holds together in some perceptible manner all the sentences that constitute a paragraph. Placement of the theme or focus is dependent upon the goal of the concerned paragraph. If elucidation or enunciation is the goal, the theme sentence may be placed in the beginning of the paragraph. If conclusion or deduction is the goal, the theme sentence may occur at the end of the paragraph. The content of a paragraph may demand title for the paragraph with the assumption that a paragraph is a coherent whole in itself on a particular point. The view a writer takes about the structure of a particular thought should be considered as revealed in his paragraph organization.

6.2.3.3.5. Definition

Definition is an important tool for the process of scientific inquiry. A concept is identified, described, and its limits and spread well established in devising a definition for it. In essence, meaning of a word or phrase is well established for proper use in the making of a definition. Definition may be considered a naming process as well as a process of elucidating a word/phrase and its reference to a concept. A definition, in any case, should not be considered as illustration. A definition is so framed that it applies to all instances of the thing to be defined. One should also consider the purpose for which the definition is meant. Some tasks require finer definitions and some require broader definitions. Because of this reason definitions do not always include all the properties of a thing – only the significant ones are included.

Definitions are composed of technical terms and are composed to characterize the

concepts indicated by the technical terms. Technical terms are to be considered special type of words. They have some of the characteristics of common names and are used as labels.

A technical term is a term, in the sense we have used the word here, only so long as it is part of a technical system. A term is also a lexical item in the sense that it can be assigned to word classes (parts of speech) of a language, and can have various syntactic relations like ordinary lexical items. The technical terms of linguistics exhibit more logical and explicit association than the lexical systems of ordinary language.

In linguistics the technical terms are meant generally to describe language and language structure. In ATS the technical terms are used to denote mainly the structure and function of language. There are quite a good amount of technical items dealing with syntax.

6.3. Style sheet of linguistic texts

The style sheet of the linguistic journals make order and homogeneity which is their main goal; the nature of order and homogeneity of expressions and format are decided upon by the constraints imposed by matter and the practice, with reason or no reason, followed by the journal. The restrictions imposed range from the length of the article to the presentation of tables, citation and presentation of references, spelling of words, use of certain phrases, the order of progression form one segment or section to another, rules for quoting, etc, to even (very rarely) the sentence patterns to be used or avoided and content included. Within such restrictions also, an ingeneous writer is given wide scope to make innovations and even

6.4. Untranslatable text

Linguistic textbooks make use of a lot of language data to explain the linguistic issues. The language data could be in English or in any other language spoken in the world. Such language data that is given as illustrations and examples to explain the linguistic issues need not be translated. Such language data have to be tagged and marked as untranslatable items. Tables and diagrams have to be blocked and kept aside for separate treatment.

6.5. Summary

We have discussed the unique characteristics of language of linguistics. In terms of selection of vocabulary and technical terms linguistics differs from other discipline. Its discourse structure is also unique in nature. It is a must for us to understand the language of linguistics as the aim of the thesis to translate linguistic text books in English into Tamil. What is applicable to English is also applicable to Tamil as for as the language of linguistics is concerned. As Tamil is still a developing language as for as the linguistic discourse is concerned, the transfer of ideas form English to Tamil is a hard task. The problem of finding equivalents for technical terms coupled with transferring linguistic discourse in English into Tamil is paramount problem. So it is essential to understand the unique features of language of linguistics before attempting to prepare an MTA for transferring linguistic knowledge in English into Tamil.

CHAPTER 7

PREPARTION OF A PROTOTYPE OF MTA

7.0. Prelude

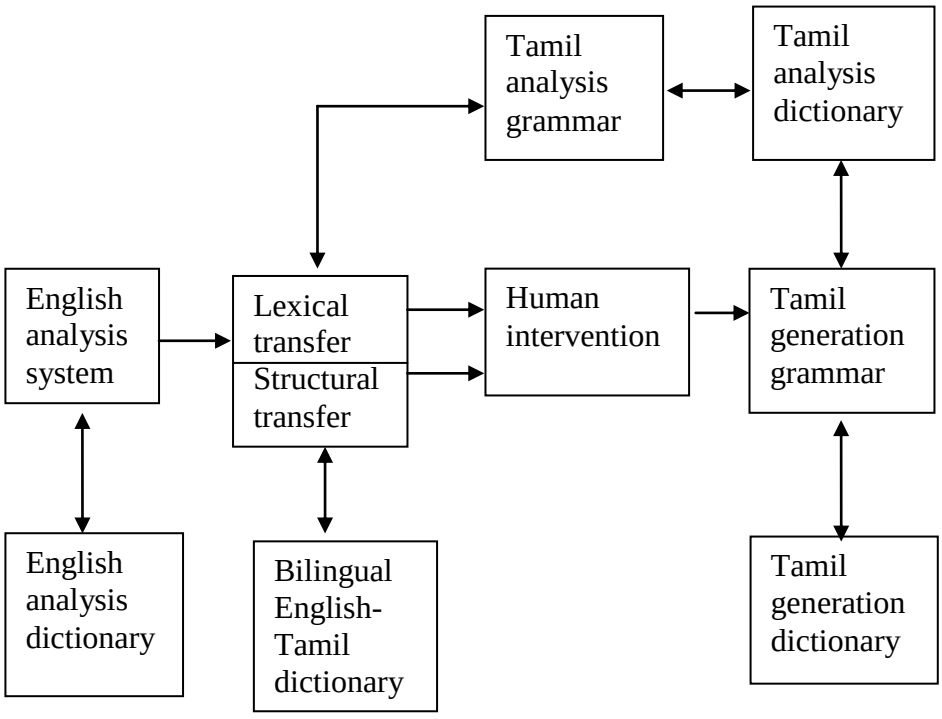
This is the final chapter of the thesis that aims to explain the prototype of MTA for translating linguistic text books in English into Tamil. The following preliminaries have been worked out to prepare the prototype of MTA.

1. English analysis system
2. English analysis dictionary
3. Tamil analysis grammar
4. Tamil analysis dictionary
5. Tamil generation grammar
6. Tamil generation dictionary
7. Bilingual English-Tamil Dictionary

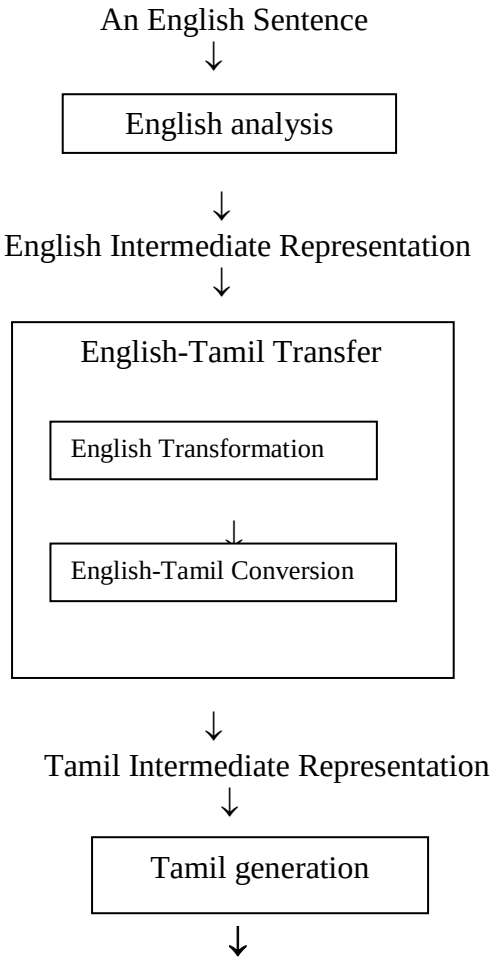
Structural analysis of English and Tamil sentences has been made to cover both the core of the sentential structures as well deviant structures. The correlative study of the structures of English and Tamil have been made and tabulated for the purpose of computation. The word order of English and Tamil have been studied from the point of view of machine translation and the correlative analysis of both the word order systems have been worked out and the results are tabulated for the purpose of computation. An English-Tamil electronic dictionary of standard technical terms based on Rangan and Chandrasekaran (1994) has been prepared for the purpose of translation. Also an electronic English-Tamil dictionary of general vocabulary has been made taking into account the fact that linguistics makes use of certain words and phrase more frequently and with certain specific meaning and also that the language of linguistics is different from the language of literature and pure and applied sciences. Thus the polysemy has been put under control.

7.1. Prototype of English-Tamil MTA

The following diagram will depict the schema of the proposed structural and lexical transfer model of MTA.


Tamil analysis grammar
Tamil analysis dictionary
English analysis system
Lexical transfer
Structural transfer
Human intervention
Tamil generation grammar
English analysis dictionary
Bilingual English-Tamil dictionary
Tamil generation dictionary

The prototype of English-Tamil Machine Translation Aid consists of the following component.



First of all, an English sentence is syntactically analyzed in the English analysis phase. The output of this analysis is one or more parse trees. Second, in English-Tamil transfer phase, an English parse trees, or an English intermediate representation, is transferred. During this transfer, an English parse tree is at first transformed by the transformation component to an English tree in Tamil-like style, and this result is converted to a Tamil tree by the English-Tamil conversion component. Finally, in the Tamil generation phase, one or more Tamil sentences are produced by operation such as generating Tamil auxiliary verb, determining case particles, and rearranging word order.

7.1.1. English analysis system

For analyzing English, we make use of the following tools:

1. The English parser
2. The English analysis grammar
3. The English analysis dictionary

The English analysis is based on an augmented phrase structure grammar and is syntactically performed in a bottom-up and parallel manner. As the syntactic analysis of English sometimes produces more than one parse tree, the English parser computes metric values, which indicate the plausibility of the parse trees based on characteristics of the modifications between phrases. When more than one parse tree is obtained by analysis, semantically incorrect parse trees are discarded during the English-Tamil transfer.

For the syntactic analysis of a text we need a detailed knowledge of the linguistic properties of the individual words in the text. It is often useful to divide the analysis into two stages. They involve the identification of the linguistic properties of the individual words followed by the assessment of the function of the words in relation to each other. The first stage is often called tagging, and the second stage parsing.

7.1.1.1. Tagging

For the parsing of text for the purpose of Translation, we require a tagger that will tag the words of the texts with the grammatical category. One such tagger is built to serve our purpose. Though tagger for English is available for research purpose, it one such attempt is made here to understand the intricacies involved in preparing a tagger for English. The information attached to the individual words during the tagging process is usually word class or the parts of speech that it represents. First of all the text needs to be divided into individual words. As we have taken the ATS for the purpose of preparing MTA, a sample of text, say ten pages have been parsed into words.

This
study
will
touch

on
a
variety
of
topics
in
syntactic
theory
and
English
syntax
.

Because the punctuation is important in the analysis of the text, the comma and full stop have been treated as separate words. For each of these items, word class information has been allocated. The source of this information is the entry in the translation dictionary (TD) prepared for the purpose. For the sake of clarity full name is used instead of the abbreviated names used in the TD.

This	- DETERMINER
study	- NOUN, VERB
will	- MODAL/NOUN/VERB
touch	- VERB/NOUN
on	- PREPOSITION
a	- DETERMINER
variety	- NOUN
of	- PREPOSITION
topics	- NOUN
in	- PREPOSITION
syntactic	- ADJECTIVE
theory	- NOUN
and	- COORDINATOR
English	- NOUN, ADJECTIVE
syntax	- NOUN
.	- PUNCTUATION

The word class information has been given in upper case to make it easier to distinguish from the original words. The dictionary has no entry for the punctuation (except as the nouns 'comma' and 'full stop'), so it has simply been labeled as 'PUNCTUATION' for the time being. It can be noticed that not all the words have single word class labels attached to them: *touch* can be a verb or an abstract noun; *English* can be an abstract noun or an adjective; *will* can be a modal, a noun or a verb. This potential ambiguity is resolved by using constraints on the distribution of the grammatical category. The tagged out put will be more or less in the following fashion.

This_DET study_N will_MOD touch_V on_PRE a _DET variety_N of_PRE of_PRE topics_N in_PRE syntactic_ADJ structure_N

The following table gives the tag sets used in parts-of-speech tagging.

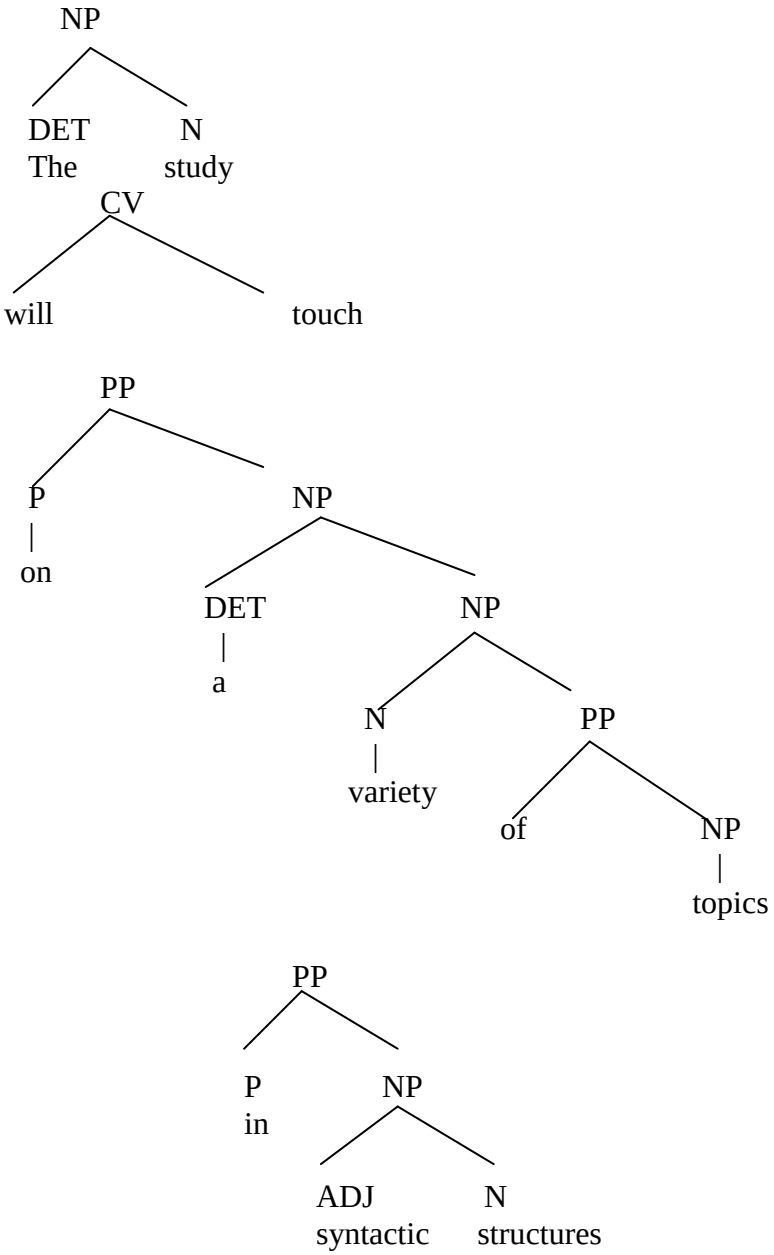
Description	**Tag symbol**	**Example**
Adjective	ADJ	Yellow
Adjective, comparative	ADJ_C	Bigger
Adjective, positive	ADV_P	Big
Adverb	ADV	Quickly, never
Adverb, comparative	ADV_C	Quicker
Adverb, superlative	ADV_S	Fastest
Compound verb	CV	Will come
Coordinate conjunction	COC	And, but, or
Cardinal number	CNUM	One, two, three
Determiner	DET	A, an, the, this, that, these,
Existential ‘there’	EX	There
Foreign word	FW	Kannan
Noun	N	Book
Noun, singular	NSG	Book
Noun, plural	NPL	Books
Particle	PAR	Up, off
Personal pronoun	PN	I, we, he , she, it

Description	Tag symbol	Example
Possessive	POS	‘s
Possessive pronoun	POPN	His, hers, mine
Pronoun, singular	PNS	Your, one’s
Predeterminer	PDET	All, both
Ordinal number	ONUM	First, second, third
Quantifier	Q	Some, all
Demonstrative	DEM	This, that, these, those
Verb base	V1	Come, go, get
Verb, non-third person singular present	V1	Come, go, get
Verb, third person singular present tense	V1S	Comes, Goes
Verb, past	V2	Came, went
Verb, past participle	V3	Come, gone
Verb, continuous/ gerund	V4	Piloting

7.1.1.2. Parsing

The word class information is added to the words in the tagging processes describes their potential roles as individual words. To parse the sentences their functions as parts of a clause have to be identified. The syntactic rules we have given as programme are capable of grouping the words into phrases and phrases into sentences as given below:

This_DET study_N will_MOD touch_V on_PRE a _DET variety_N of_PRE topics_N in_PRE syntactic_ADJ structure_N



7.1.2. English-Tamil Transfer

Generally, the transfer process of a transfer approach, including semantic processing, tends to be complicated and difficult to maintain. But transfer approach seems to be most straightforward for implementing human translators' knowledge, which includes various types of linguistic information such as specific words, syntactic structures, and semantic information. There are many English-proper expressions whose styles are very different form Tamil ones and that have no simple corresponding expressions in Tamil. The English-Tamil transfer component of our system is divided into two separate components:

1. An English transformation component
2. An English-Tamil conversion component

We can call our approach a two-pass transfer method. Using English transformation rules, the English transformation component rewrites an English parse tree and produces a new style of English, which is close to Tamil syntax. This can then easily be converted to a corresponding Tamil tree. When we expect different English expressions to be translated to the same Tamil expression, we only have to write English transformation rules instead of the English-Tamil transfer rules of conventional approach. Moreover, when we want MT system to change a Tamil expression, we are required only to modify some English-Tamil conversion rules instead of modifying a larger number of English-Tamil transfer rules. Consequently, the two-pass transfer method provides us with modularity and maintainability of the transfer component.

7.1.2.1. English Transformation

English transformation is performed using English transformation rules and a transformation dictionary. Transformation sometimes requires a derivative form of an English word, such as a verbal form of a noun and an adverbial form of an adjective. The transformation dictionary contains this sort of derivational data. The transformation rules are categorized into groups according to the syntactic categories of nodes in parse trees. Each group is also classified into several subgroups. For example, the rule for a sentence consists of 22 sub-groups, such as an inversion-rule sub-group, an insertion-rule sub-group, and an ellipsis-rule sub-group. The following are examples of application of the rules to sentences.

1. There has been a fair amount of criticism of work in generative grammar.

↓

A fair amount of criticism of work in generative grammar has existed.

2. It is only when supplemented by a universal grammar that the grammar of a language provides a full account of the speaker-hearer's competence.

↓

When supplemented by a universal grammar, the grammar of a language provides a full account of the speaker-hearer's competence.

3. It is important to give some thought to several methodological questions of justification and adequacy.

↓

Giving some thought to several methodological questions of justification and adequacy is important.

The following are examples of application of the rules to noun phrases.

1. Execution of the rule

↓

executing the rule

2. the development of the theory of actual performance

↓

actual performance theory development

Transformations are performed in a top-down manner in an English parse tree. At each node of the tree, the rule group corresponding to the syntactic type of the node is retrieved; and this rule group is applied to the sub-tree only once. In the application of this rule group, each sub group is sequentially applied to the sub-tree only once. If a matching pattern in a transformation rule matches the sub-tree and a target pattern produces a new tree, the rest of the rules in the sub-group are no longer used and processing of the next sub-group begins. We have designed the rule groups and their sub-group to avoid backtracking and repetitive application of the same rule.

7.1.2.2. English-Tamil Conversion

A transformed English tree is converted to a corresponding Tamil tree by using conversion rules and a conversion dictionary. The functions of this process are:

1. Determining appropriate Tamil syntax, equivalents, and additional linguistic data such as tense, aspect, modality, and voice
2. Disambiguating modifications of English phrases

The English-Tamil conversion component converts a transformed English tree to a Tamil tree, moving in a bottom-up and parallel manner through the English tree. First of all, the English-Tamil conversion dictionary is searched for all English words, which are terminal symbols of the English parse tree. This is part of the English-Tamil conversion of the lowest level sub-trees of the English tree. The upper level English sub-tree is converted to a corresponding Tamil sub-tree by using the English-Tamil conversion rules and the results of the conversion of the lower level English sub-trees. Generally syntactic transformations are operations that map from one tree to another. Such transformations can restructure an entire sentence into another structure.

The general framework within which this investigation will proceed

↓

this investigation will proceed within which the general framework

This can be easily converted to a corresponding Tamil tree.

indta aayvu toTara irukkiRa potuvaana caTTakam

7.1.3. Tamil generation

The Tamil generation component produces one or more sentences from a tree that conveys Tamil syntax, Tamil equivalents, and other information. The functions of this component are the following:

1. To generate Tamil auxiliary verbs
2. To determine the appropriate Tamil equivalents for adverbs, negation, determiners and conjunctions, including subordinate conjunctions
3. To position adverbial phrase in the sentence
4. To modify Tamil case particles
5. To reorder noun phrases
6. To insert punctuation
7. To erase any duplicate subjects

Tamil auxiliary verbs are generated based on verb information such as the original form of the verb, the conjunction type of the verb, tense, aspect, voice and modality.

7.1.4. Word sense disambiguation

Interpretation of meaning of a sentence to be translated from a source language to a target language is a major issue in machine translation. The ambiguities found in the source language sentence will give rise to many translation equivalents in the target language. The ambiguities could be due to different structural readings or due to different lexical or meaning readings. A sentence with more than two structural interpretations is said to be multiply ambiguous. An analysis, which demonstrates the ambiguity in a sentence, is said to disambiguate the sentence. Ambiguity, which does not arise from the grammatical analysis of a sentence, but is due solely to the alternative meanings of an individual lexical item, is referred to as lexical ambiguity. Resolving both grammatical or structural and lexical ambiguities is a major issue in the interpretation of meaning of source language sentences. If a source language sentence is ambiguous, then it is likely that it may give rise to multiple numbers of translation equivalents of that sentence in the target language. In the case of human translation, ambiguity is not a major problem as the translator can resolve it by understanding the context in which the sentence is used. But for a machine, which relies on parsed trees and bilingual dictionary, ambiguity can cause menace of multiple meaning interpretations, there by giving multiple target language equivalents. So it became essential to explore the menace of multiple meaning interpretations in machine translation and tries to find ways to resolve the problem.

We can exploit two powerful properties of human language in the context of disambiguating the sentences of a text.

1. One sense per collocation: Nearby words provide strong and consistent clues to the sense of a target word, conditional on relative distance, order and syntactic relationship.
2. One sense per discourse: The sense of a target word is highly consistent within any given document.

Moreover, language is highly redundant, so that the sense of a word is effectively over determined by (1) and (2) above. We can make use of these properties to incrementally identify collocations for target senses of words, given a few seed collocations to each sense.

The algorithm should begin with seed words that accurately and productively distinguish the possible senses. Such seed words can be selected by any of the following strategies:

1. Use words in dictionary definitions: Extract seed words from a dictionary's entry for the target sense. This can be done automatically, using words that occur with significantly greater frequency in the entry relative to the entire dictionary.
2. Use a single defining collocates for each class: Remarkably good performance may be achieved by identifying a single defining collocate for each class.
3. Label salient corpus collocates: Words that co-occur with the target word in unusually great frequency, especially in certain collocational relationships, will tend to be reliable indicators of one of the target word's senses.

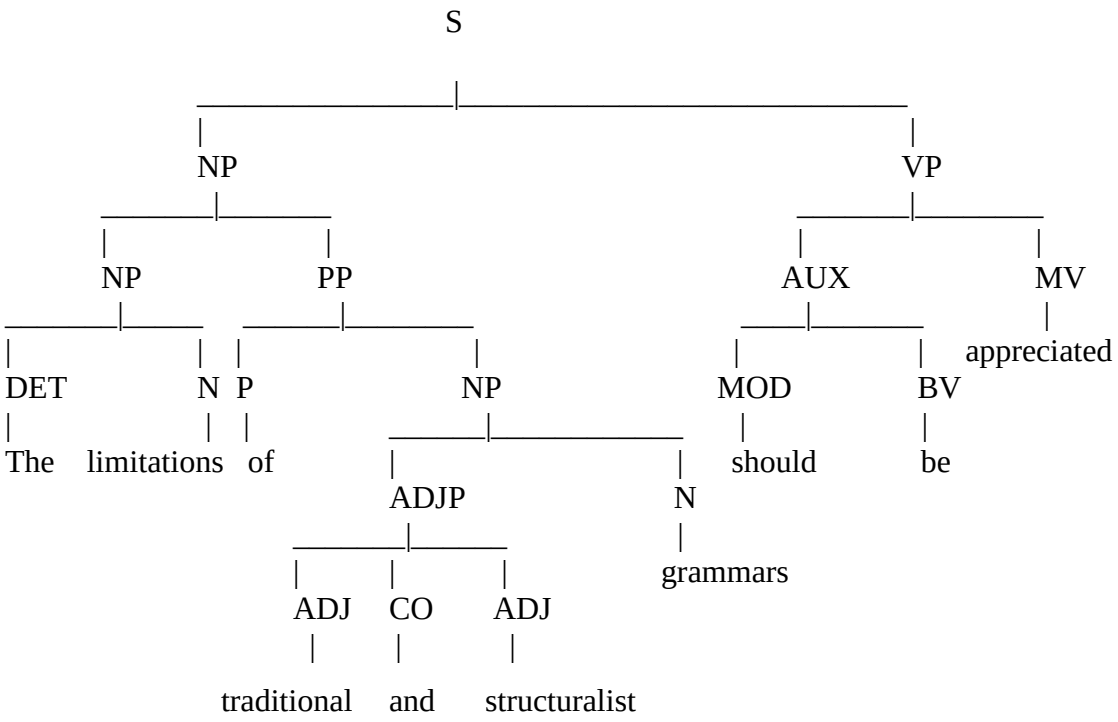
The algorithm performs well using only local collocational information, treating each token of the target independently. However, accuracy can be improved by also exploiting the fact that all occurrences of a word in the discourse are likely to exhibit the same sense.

7.1.5. Exemplification

The following exemplification will illustrate how to transfer an English sentence into Tamil sentence by Lexical and Structural Transfer approach.

The limitations of traditional and structuralist grammars should be appreciated.

Assume that the parser has given a structure like the following:

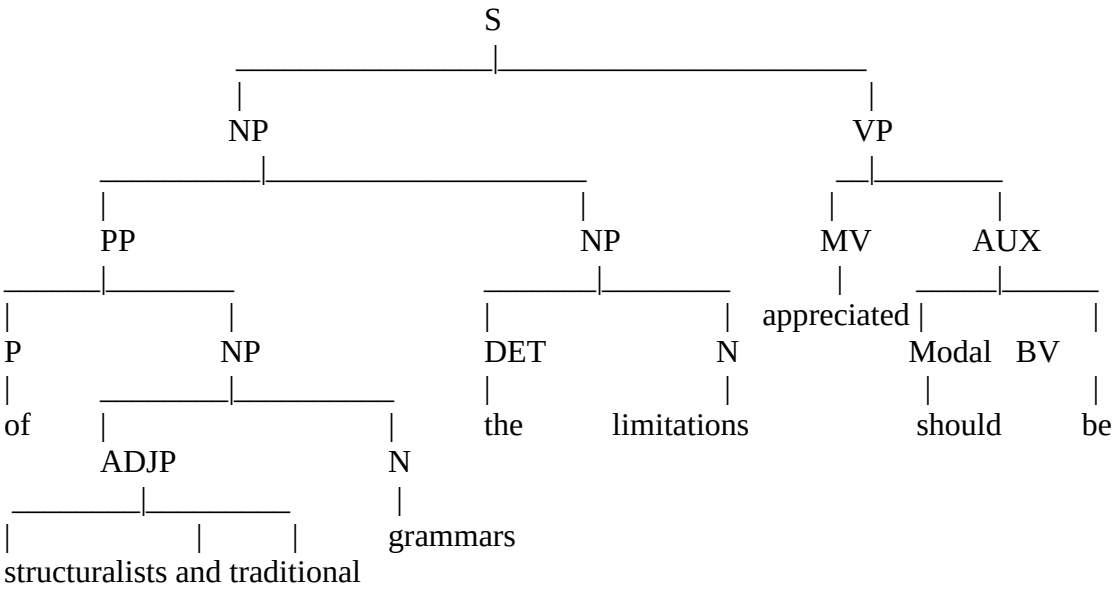


The following transfer rules will operate to suit the Tamil sentential structure

1. 'NP + PP' pattern of English will be changed into 'PP + NP' as possessive phrase comes before the head NP in Tamil.
2. 'AUX + MV' pattern of English will be changed into MV + AUX to suit the Tamil pattern as auxiliary verb always follows the main verb in Tamil.

The operation of the transfer rules will result in the following intermediate structure:

Intermediate structure 1

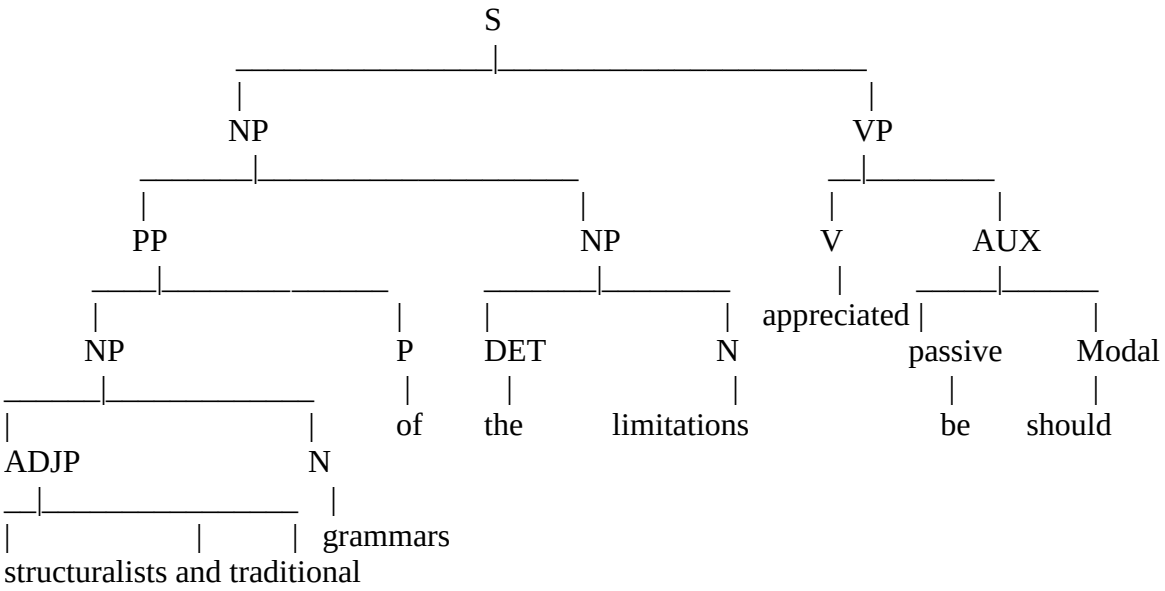


The following transfer rules should also to be noted:

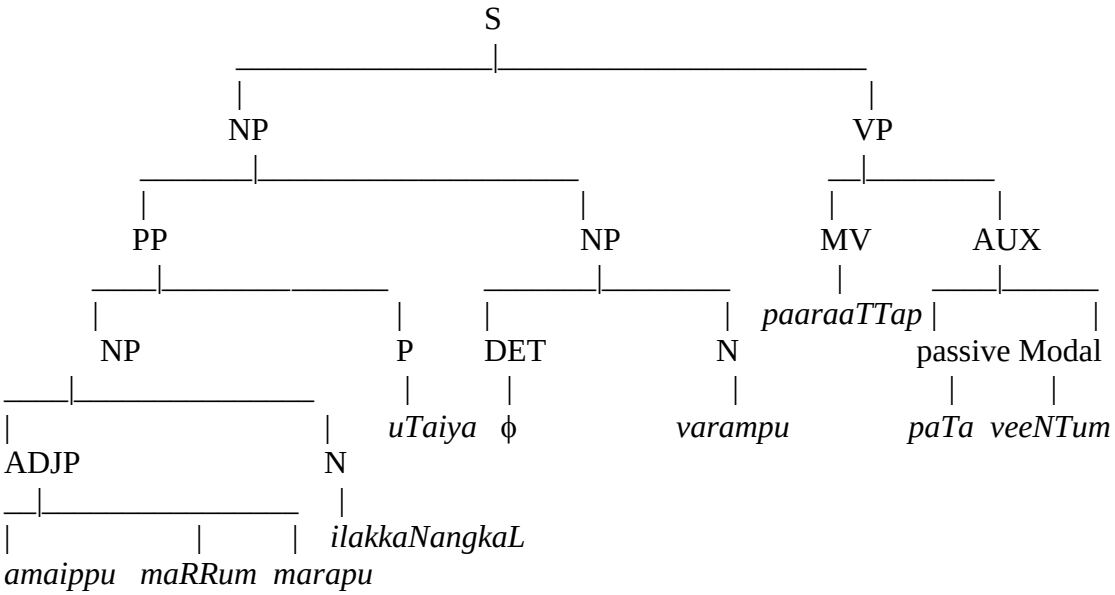
3. The prepositional phrase will be transferred into postpositional phrase:

4. Modal be followed by past participle for the verb will become MV-INF passive verb + Modal verb in Tamil

Intermediate structure 2



The application of lexical transfer will result in the following Tamil structure:



7.2. Conclusion

The concluding remarks made here are not simply meant for this chapter alone; it covers up 7 chapters including the present one.

7.2.1. Fulfilment of the aims and objectives

The architecture of sentence building mechanism of English has been studied thoroughly. The ways by which parsing can be performed on the English text and get the needed parsed tree for lexical and structural transfer have been identified. The word building, phrase building, clause building and sentence building mechanisms of English have been investigated. The constituent structures of NP, VP, Adj. P, Adv. P and PP have been explored. All the sentential patterns of English have been identified. With the help of these patterns it is hoped to get the parsed trees of English sentences in terms of words, phrases and clauses that can be converted into Tamil-oriented parsed trees that is liable for structural and lexical transfer.

The word building mechanism of Tamil has been outlined to facilitate lexical transfer. Building of major phrases such as noun phrase, verb phrase, adjectival phrase, adverbial phrase and postpositional phrase have been studied with an eye on transfer mechanism. The clause building mechanism by subordination has been thoroughly explored. Different types of dependent and independent clauses have been identified and their structural patterns have been designed to facilitate transfer mechanism. The coordination of phrases and clauses has been dealt under the relevant heads. The architecture of building different types of Tamil sentences and their word orders have been studied with the aim of transferring the English sentences into Tamil.

The mechanism of transferring English sentences into Tamil has been explored by correlating the syntactic structures of the two languages. The correlative study tried to explore the commonalities and differences in the structure of English and Tamil from the point of view of computation to build a machine translation aid to translate English into Tamil. It has been noticed that the two language deviate from one another from the point of view of English as language of SVO and Tamil as language of SOV, i.e. verb final

language. While English makes use of preposition to link nominal arguments with verbs, Tamil makes use of postposition and case markers to serve the same purpose. The absence of regular case inflection in the case of English makes it rigid in its word order and the presence of case inflection in Tamil makes it more flexible in its word order. English distinguishes subject form object by means of the position, i.e. word order, where as Tamil does it by case inflection. Relative clause in English is after the head noun that is attributed and in Tamil it comes before the head noun. The infinitive clause in English comes after the main clause, whereas in Tamil it comes before the main clause. That-clause complement occurs at the right side of the main clause in English, whereas it occurs at the left side of the main clause in Tamil. Interrogation in English is effected by changing the order of the words, i.e. by moving an auxiliary verb to the initial position before subject Interrogation in Tamil is effected by suffixing interrogative clitics or by making use of interrogative pronouns. In English, the auxiliary verbs and the interrogative words occur in the initial position of the construction. In Tamil, the interrogative particles occur in the final position of any word in the construction.

The unique characteristics of language of linguistics have been explored. In terms of selection of vocabulary and technical terms linguistics differs from other discipline. Its discourse structure is also unique in nature. It is a must for us to understand the language of linguistics as the aim of the thesis to translate linguistic text books in English into Tamil. What is applicable to English is also applicable to Tamil as for as the language of linguistics is concerned. As Tamil is still a developing language as for as the linguistic discourse is concerned, the transfer of ideas form English to Tamil is a hard task. The problem of finding equivalents for technical terms coupled with transferring linguistic discourse in English into Tamil is paramount problem. So it is essential to understand the unique features of language of linguistics before attempting to prepare an MTA for transferring linguistic knowledge in English into Tamil.

A prototype of English-Tamil machine translation aid based on lexical and structural transfer approach has been prepared. No claim is made here that a full-fledged automatic translation can be achieved by making use of the present prototype. But the prototype can be converted into a full-fledged package for translating linguistics texts in English into Tamil with human interference if proper changes are adapted to suit the new

requirements. The exhaustive correlative study of English and Tamil which amalgamates both contrastive and typological studies of the two languages will be a future documentation for one who will attempt for a full fledged MT system for transferring English into Tamil. We have a long way to go. But still we have made a beginning.

7.2.2. Conclusion arrived at by testing the hypotheses

The hypothesis tested reveals the following conclusions.

1. It has been found out that though the preparation of a completely automated machine translation is difficult to achieve, it is feasible to achieve a human aided machine translation or machine aided human translation.

2. The study leads us to conclude that a successful preparation of a machine translation aid needs a thorough linguistic analysis aiming at unfolding the structure of the source language and target language complemented by a correlative study aiming at understanding the mechanism of transferring the source language into target language.

3.It has been understood by the investigation that by making the text of the target language domain specific, i.e. linguistics text, the menace of meaning interpretation in machine translation can be very much reduced.

4.It has been found that the nearby words provide strong and consistent clues to the meaning of a target word, conditional on relative distance, order and syntactic relationship. The meaning of a target word is highly consistent within any given document.

5.The lexical transfer approach is a transparent and modular model that facilitates evaluation at every step in the procedural mechanism.

APPENDIX 1

Text

A grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence. If the grammar is, furthermore, perfectly explicit- in other words, if it does not rely on the intelligence of the understanding reader but rather provides an explicit analysis of his contribution – we may (somewhat redundantly) call it a generative grammar.

A fully adequate grammar must assign to each of an infinite range of sentences a structural description indicating how this sentence is understood by the ideal speaker-hearer. This is the traditional problem of descriptive linguistics, and traditional grammars give a wealth of information concerning structural descriptions of sentences. However, valuable as they obviously are, traditional grammars are deficient in that they leave unexpressed may of the basic regularities of the language with which they are concerned. This fact is particularly clear on the level of syntax, where no traditional or structuralist grammar goes beyond classification of particular examples to the stage of formulation of generative rules on any significant scale. An analysis of the best existing grammars will quickly reveal that this a defect of principle, not just a matter empirical detail attempt to explore this largely uncharted territory can most profitably begin with a study of the kind of structural information presented by traditional grammars and the kind of linguistic process that have been exhibited however informally, in these grammars.

The limitations of traditional and structuralist grammars should be clearly appreciated. Although such grammars may contain full and explicit list of exceptions and irregularities, they provide only examples and hints concerning the regular and productive syntactic processes. Traditional linguistic theory was not unaware of this fact.

Tagged text

A/DET grammar/N of/P a/DET language/N purports/VS to/P/INF be/BV a/DET description/N of/P the/DET ideal/ADJ speaker-hearer's/N2 intrinsic/ADJ competence/N. If/CON the/DET grammar/N1 is/BV, furthermore/CON, perfectly/ADV explicit/ADJ-in/P other words/N, if/CON it/PPN does/VS not/NEG rely/V1 on/P the/DET intelligence/N of/POS the/DET understanding/VG reader/N but/COO rather/ADV provides/VS an/DET explicit/DET analysis/N of/P his/PPNS contribution/N – we/PPN may/MOD (somewhat/ADD redundantly/ADV) call/V1 it/PPN a/DET generative/ADJ grammar/N1.

A/DET fully/ADV adequate/ADJ grammar/N must/MOD assign/V to/P each/ADJ of/P an/DET infinite/ADJ range/N of/P sentences/N a/DET structural/ADJ description/N indicating/VG how/ADV this/DET sentence/N is/BV understood/V by/P the/DET ideal/ADJ speaker-hearer/N. This/DET is/BV the/DET traditional/ADJ problem/N of/P descriptive/ADJ linguistics/N, and/CO traditional/ADJ grammars/N give/V a/DET wealth/N of/P information/N concerning/VG structural/ADJ descriptions/N of/P sentences/N. However/ADV, valuable/ADJ/N as/ADV they/PPN obviously/ADV are/BV, traditional/ADJ grammars/N are/BV deficient/ADJ in/P that/DET/COM they/PNN leave/N/V unexpressed/V3 may/MOD of/P the/DET basic/ADJ regularities/N of/P the/DET language/N with/P which/PN they/PPN are/BV concerned/V. This/DET fact/N is/BV particularly/ADV clear/ADJ on/P the/DET level/N of/P syntax/N, where/ADV no/ADJ/ADV traditional/ADJ or/CO structuralist/ADJ grammar/N goes/V beyond/P classification/N of/P particular/ADJ/N examples/N to/P the/DET stage/N of/P formulation/N of/P generative/ADJ rules/N on/P any/ADJ/PN significant/ADJ scale/N. An/DET analysis/N of/P the/DET best/ADJ existing/VD grammars/N will/MOD quickly/ADV reveal/V that/DET/COM this/DET is/BV a/DET defect/N of/P principle/P, not/ just/ADJ/ADV a/DET matter/N of/P empirical/ADJ detail/N or/CO logical/ADJ preciseness/N. Nevertheless/ADV, it/PPN seems/V obvious/ADJ that/DET/COM the /DET attempt/V/N to/P/INF explore/V this/DET largely/ADV uncharted/ADV territory/N can/MOD most/ADJ/ADV profitably/ADV begin/V with/P a/DET study/N/V of/P

the/DET kind/ADJ/N of/P structural/ADJ information/N presented/V by/P traditional/ADJ grammars/N and/CO the/DET kind/N/ADJ of/P linguistic/ADJ process/N/V that/DET/COM have/AV/V been/AV exhibited/V however/ADV informally/ADV, in/P these/DET grammars/N.

The/DET limitations/N of/P traditional/ADJ and/CO structuralist/ADJ grammars/N should/AV be/BV clearly/ADV appreciated/V. Although/CON/COM such/ADJ grammars/N may/MV contain/V full/ADJ and/CO explicit/ADJ list/N/V of/P exceptions/N and/CO irregularities/N, they/PPN provide/V only/ADJ/CON examples/N and hints/V/N concerning/VG the/DET regular/ADJ and/CO productive/ADJ syntactic/ADJ process/N/V. Traditional/ADJ linguistic/ADJ theory/N was/BV not unaware/ADJ of/P this/DET fact/N.

Parsed text

1. [[A/DET grammar/N]NP [[of/P [a/DET language/N]]PP [purports/V]CV to/P/INF [be/BV] [a/DET description/N]NP [[of/P [the/DET ideal/ADJ speaker-hearer's/POS intrinsic/ADJ competence/N]NP]]PP].

2. If/CON [the/DET grammar/N1]NP [is/BV]CV, furthermore/CON, [perfectly/ADV explicit/ADJ]ADJP – [[in/P [other words/N]NP]]PP, if/CON [it/PPN]NP [does/VS not/NEG rely/V1]CV [[on/P [[the/DET intelligence/N]]NP]PP] [of/P [the/DET understanding/VG/ADJ reader/N]]NP]PP but/CO [rather/ADV]ADVP [provides/V]CV [an/DET explicit/ADJ analysis/N]NP [of/P [his/PPNS contribution/N]NP]PP – [we/PPN]NP [may/MOD (somewhat/ADV redundantly/ADV) call/V]CV [it/PPN]NP [a/DET generative/ADJ grammar/N]NP].

3. [A/DET fully/ADV adequate/ADJ grammar/N]NP [must/MOD assign/V]V" to/P each/ADJ of/P an/DET infinite/ADJ range/N [of/P [sentences/N]NP]NP [a/DET structural/ADJ description/N]NP indicating/VG how/ADV [this/DET sentence/N]NP [is/BV understood/V]CV [by/P [the/DET ideal/ADJ speaker-hearer/N]NP]PP]VP]S.

4. [This/DET]NP [[is/BV]V" [[the/DET traditional/ADJ problem/N]NP [of/P [descriptive/ADJ linguistics/N]NP]PP]NP]VP, and/CO [traditional/ADJ grammars/N]NP

[give/V]CV [a/DET wealth/N]NP [of/P [information/N]NP]PP concerning/VG [[structural/ADJ descriptions/N]NP [of/P [sentences/N]NP]PP]NP.

5. However/ADV, valuable/ADJ/N as/ADV [they/PPN]NP [obviously/ADV]ADVP [are/BV]CV, [traditional/ADJ grammars/N]NP [are/BV]CV [deficient/ADJ]ADJP in/P that/DET/COM [they/PNN]NP [leave/N/V unexpressed/V]CV [many/ADJ [[of/P [the/DET basic/ADJ regularities/N]]NP]PP [[of/P [the/DET language/N]NP]]PP with/P which/PN [they/PPN]NP [are/BV concerned/V]CV.

6. [This/DET fact/N]NP [is/BV]V" [particularly/ADV clear/ADJ]ADJP [[on/P [[the/DET level/N]NP]PP [of/P [syntax/N]NP]PP]NP]PP, where/ADV/COM [no/ADJ/ADV traditional/ADJ or/CO structuralist/ADJ grammar/N]]NP [goes/V]V" [beyond/P [classification/N]NP]PP [of/P [particular/ADJ/N examples/N]NP]PP [to/P [the/DET stage/N]NP]PP [of/P [formulation/N]NP]PP [of/P [generative/ADJ rules/N]NP]PP [on/P [any/ADJ/PN significant/ADJ scale/N]NP]PP.

7. [An/DET analysis/N] [of/P [[the/DET best/ADJ existing/VG/ADJ grammars/N]]PP [will/MOD quickly/ADV reveal/V]CV that/DET/COM [this/DET/N]NP [is/BV]CV [a/DET defect/N]NP [[of/P [principle/N]NP]]PP, not/NEG just/ADJ/ADV [a/DET matter/N]NP [[of/P [empirical/ADJ detail/N or/CO logical/ADJ preciseness/N]NP]]PP.

8. Nevertheless/ADV, [it/PPN]NP [seems/V]CV [obvious/ADJ]ADJP that/DET/COM [the /DET attempt/V/N]NP to/P/INF [explore/V]CV [this/DET largely/ADV uncharted/ADV territory/N]NP [[can/MOD most/ADJ/ADV profitably/ADV begin/V]]CV [[with/P [a/DET study/N/V]PP]] [of/P [the/DET kind/ADJ/N]]PP [[of/P [structural/ADJ information/N]NP]]PP [presented/V]CV [[by/P [traditional/ADJ grammars/N]]PP and/CO [the/DET kind/N/ADJ]NP [[of/P [linguistic/ADJ process/N/V]NP]]P that/DET/COM [have/AV/V been/AV exhibited/V]CV however/ADV informally/ADV, [[in/P [these/DET grammars/N]NP]]PP.

9. [The/DET limitations/N]NP [[of/P [traditional/ADJ and/CO structuralist/ADJ grammars/N]NP]]PP [should/AV be/BV clearly/ADV appreciated/V]CV.

10. Although/CON/COM [such/ADJ grammars/N]NP [may/MV contain/V]CV [full/ADJ and/CO explicit/ADJ list/N/V]NP [[of/P [exceptions/N and/CO irregularities/N]NP]]PP, [they/PPN]NP [provide/V]CV [[only/ADJ/CON examples/N and hints/V/N]NP concerning/VG [the/DET regular/ADJ and/CO productive/AFJ syntactic/ADJ process/N/V]NP.

11. [Traditional/ADJ linguistic/ADJ theory/N]NP [was/BV not]V" [unaware/ADJ]ADJP [[of/P [this/DET fact/N]NP]PP].

Out put of conversion to suit the Tamil structure

1.[[[a/DET language/N] of/P]] [A/DET grammar/N]]NP [the/DET ideal/ADJ speaker-hearer's/POS intrinsic/ADJ competence/N]NP]] of/P]] PP] [a/DET description/N]NP [purports/V]CV to/P/INF [be/BV]

2.furthermore/CON [the/DET grammar/N1]NP [perfectly/ADV explicit/ADJ]ADJP is/BV]CV If/CON] – [[in/P [other words/N]NP]]PP, [it/PPN]NP[of/P [the/DET understanding/VG/ADJ reader/N]]NP]PP [[on/P [[the/DET intelligence/N]]NP]PP] [does/VS not/NEG rely/V1]CV but/CO [rather/ADV]ADVP [provides/V]CV [an/DET explicit/ADJ analysis/N]NP [of/P [his/PPNS contribution/N]NP]PP if/CON – [we/PPN]NP [it/PPN]NP (somewhat/ADV redundantly/ADV) CV [a/DET generative/ADJ grammar/N]NP]. [may/MOD call/V]

3.[A/DET fully/ADV adequate/ADJ grammar/N]NP to/P each/ADJ of/P an/DET infinite/ADJ range/N [of/P [sentences/N]NP]NP how/ADV [this/DET sentence/N]NP [by/P [the/DET ideal/ADJ speaker-hearer/N]NP]PP]VP]S. [is/BV understood/V]CV [a/DET structural/ADJ description/N]NP indicating/VG [must/MOD assign/V]CV

4. [This/DET]NP [[of/P [descriptive/ADJ linguistics/N]NP]]PP [[the/DET traditional/ADJ problem/N]NP [[is/BV]VCV, and/CO [traditional/ADJ grammars/N]NP [of/P [sentences/N]NP]PP [[structural/ADJ descriptions/N]NP concerning/VG [of/P [information/N]NP]PP [a/DET wealth/N]NP[give/V]CV.

5. However/ADV, [traditional/ADJ grammars/N]NP valuable/ADJ/N as/ADV [they/PPN]NP [obviously/ADV]ADVP [are/BV]CV, in/P that/DET/COM [they/PNN]NP [many/ADJ [[of/P [the/DET[[of/P [the/DET language/N]NP]]PP with/P which/PN [they/PPN]NP [are/BV concerned/V]CV basic/ADJ regularities/N]]NP]PP [leave/N/V unexpressed/V]CV [deficient/ADJ]ADJP[are/BV]CV

6. [This/DET fact/N]NP where/ADV/COM [no/ADJ/ADV traditional/ADJ or/CO structuralist/ADJ grammar/N]]NP [classification/N]NP]PP [of/P [particular/ADJ/N examples/N]NP]PP [on/P [any/ADJ/PN significant/ADJ scale/N]NP]PP [of/P [formulation/N]NP]PP [of/P [generative/ADJ rules/N]NP]PP [[on/P [[the/DET level/N]NP]PP [to/P [the/DET stage/N]NP]PP[goes/V]V" [beyond/P [of/P [syntax/N]NP]PP]NP]PP [is/BV]V" [particularly/ADV clear/ADJ]ADJP

7. [of/P [[the/DET best/ADJ existing/VG/ADJ grammars/N]]PP [An/DET analysis/N] [this/DET/N]NP [a/DET [[of/P [principle/N]NP]]PP defect/N]NP[is/BV]CV not/ just/ADJ/ADV [[of/P [empirical/ADJ detail/N or/CO logical/ADJ preciseness/N]NP]]PP [a/DET matter/N]NP that/DET/COM [will/MOD quickly/ADV reveal/V]CV

8. Nevertheless/ADV, that/DET/COM [[this/DET largely/ADV uncharted/ADV territory/N]NP the /DET attempt/V/N]NP to/P/INF [explore/V]CV [[can/MOD most/ADJ/ADV profitably/ADV begin/V]]CV [[with/P [a/DET study/N/V]PP]] [of/P [the/DET kind/ADJ/N]]PP [[of/P [structural/ADJ information/N]NP]]PP [presented/V]CV [[by/P [traditional/ADJ grammars/N]]PP and/CO [the/DET kind/N/ADJ]NP [[of/P [linguistic/ADJ process/N/V]NP]]P that/DET/COM [have/AV/V been/AV exhibited/V]CV however/ADV informally/ADV, [[in/P [these/DET grammars/N]NP]]PP [it/PPN]NP [seems/V]CV [obvious/ADJ]ADJP.

9. [The/DET limitations/N]NP [[of/P [traditional/ADJ and/CO structuralist/ADJ grammars/N]NP]]PP [should/AV be/BV clearly/ADV appreciated/V]CV.

10. Although/CON/COM [such/ADJ grammars/N]NP [may/MV contain/V]CV [full/ADJ and/CO explicit/ADJ list/N/V]NP [[of/P [exceptions/N and/CO irregularities/N]NP]]PP, [they/PPN]NP [provide/V]CV [[only/ADJ/CON examples/N and hints/V/N]NP

concerning/VG [the/DET regular/ADJ and/CO productive/AFJ syntactic/ADJ process/N/V]NP.

11. [Traditional/ADJ linguistic/ADJ theory/N]NP [was/BV not]V" [unaware/ADJ]ADJP [[of/P [this/DET fact/N]NP]PP].

Tamil output

Out put after structural and lexical transfer

1. *oru mozhiyin ilakkaNam ndiRaivaana peecupavar-keeTpavarin uLLaarndta aRitiRattin viLakkamaaka koLLalaam* .

2. *meelum ilakkaNam cariyaana viLakkamaaka irundtaal, ataavatu atu paTippavarin aRivai caarndtirukkaamal avararuTaiya ceyalukku viLakkamaana aayvu taruvataayirundtaal atai ndaam aakkamuRai ilakkaNam enRu kuuRalaam.*

3. *oru muzhumaiyaana ndiRaivaana ilakkaNam ovvoru eNNilaTangkaata vaakkiya toTarccikaLukkum evvaaRu indta vaakkiyam ciirmaiyaana peecupavar-keeTpavar aakiyooraal purindtu koLLLappaTukiRatu enRa oru amaippu viLakkam tarappaTa veeNTum.*

4. *itu oru vivaraNai mozhiyiyalin marapu aTippaTaiyilaana cikkal meelum/maRRum marapilakkkaNangkaL vaakkiyangkaLin amaippu viLakkangkaLaip paRRiya kuuTutalaana ceytikaLi tarukinRana.*

5. *iruppinum marapilakkaNangkaL veLippaTaiyaaka evvaLavu payanuLLataaka irundtaalum, avai avaikaL kavanattil koLLum mozhikaLin aTippaTaiyaana ozhungkukaLaic collavillai enpatan aTippaTaiyil kuRaiyullavai aakum.*

6. *inta uNmai kuRippaaka engku marapu allatu amaippu ilakkaNam eTuttukkaaTTukaLai vakaipaTuttavataRku appaal ciRappaana aLavil aakka vitikaLai uruvaakum ndilaikku pookavillaiyoo angku toTariyal ndilaiyil teLivaanatu aakum*

7. *mika ndalla ndaTappiluLLa ilakkaNangkaLin aayvu viraivil itu koLkaikaLin kuRaipaaTu taan, anupavamuRai viLakkattin allatu tarkkariitiyaana tulliyattin viSayamoo alla enRu kaaTTum*

8. *irundtapootilum indta perumpaalum vivarangkaLaRRa ellaiyai aayum muyaRciyai marapu aTippaTaiyilaana ilakkaNangkaL tarum amaippu paRRiya takval vakaiyilirundtu ilaapakaramaaka toTangkalaam enRu veLippaTaiyaakat terikiRatu*

9. *marapu maRRum amaippu ilakkaNangkaLin elaai ndiccayamaaka teLivaaka paaraaTTap paTaveeNTum.*

10. ivvakaiylaana ilakkaNangkaL muzhumaiyaana maRRum veLippaTiyaana vitivilakku maRRum ozhungkinmai ivaRRin paTTiyalaik koNTirundtaalum, avai ozhungkaana maRRum aakat toTariyal ceyalpaaTu paRRiya eTuttukkaaTTukaL maRRum caaTaikkuRipukalaitaan tarukinRana

10. marapu mozhiyiyal koLkai indta uNmaiyaip paRRi aRiyaatirundtau.

APPENDIX 2

Sample entry of Engish-Tamil Transfer dictionary

A bilingual dictionary architecture has to allow for several possible translations of a single word, and for a way to select the possible translations in context. Since our translation is domain specific the poysemy is very much under control and many of the words found in the ordinary dictionaries become irrelevant for a linguistic text.

each/ADJ; PN	ovvoru
eager/ADJ	aavaluLLa
eagle/N	kazhuku
eaglet/N	kazhukuk kunjcu
ear/N	kaatu
earnest/ADJ	uukkamaana
earning/N	iiTTiya poruL
earth/N	ulakam
earthen/ADJ	maNNaaL ceyyappaTTa
earthiness/N	ulakap paNpukaL
earthling/N	ulakil vaazpavar
earthly/ADJ	ulakukkuriya
earth quake/N	nila naTukkam
earthy/ADJ	maNNukkuRiya
ease/N	tollaiyinmai
ease/VT	ndiikku
easel/N	paTam, karum palakai aakiyavaRRait taangki ndiRkum amaivu
easily/ADV	eLitaaka
easiness/N	ooyvu koLLum paangku
east/N	katiravan utikkum iTam
easterly/ADJ; ADV	kizhakku ticai nookki
eastern/ADJ	kizhakkattiya; kizhakku ndookki irukkiRa
easy/ADJ	kaTinamaRRa
eat/VT	uN
eating/N	uNNutal
eaves/N;	kuuraiyil irukkum kiizpakuti
eaves drop/VI	oRRuk keeL
ebb/VT	pin cel
ebony/N	karungkaali maram
ebullient/ADJ	uNarcci mikka
eccentric/ADJ	iyaRkaikku maaRupaTTa
ecclesiastic/N	matakuru
ecclesiolatry/N	kiRittavak kooyilai peritum matittu vaNangkutal
ecclesilology/N	kiRittavak kooyil kaTTiTa oppanai paRRiya

	aayvu
eccrinology/N	uTalil iruntu kaciyum poruLkaL paRRiya aayvu
echelon/N	oruvakai paTai aNi vakuppu muRai
echo/N	etiroli
eclipse/N; V	1.kirakaNam 2.oLiyizhakkaccey
ecology/N	uyirin vaazhkkaiyai aaytal
econometrics/N	poruL iyal koLkaikaLait teLivaakka kaNita vazi muRaikaLaik kaiyaaLal
economic/ADJ	poruLiyal caarndta
economical/ADJ	cikkanamaana
economics/N	poruLaataarviyal
economist/N	poruLaataara vallunar
economize/VT	cikkanappaTuttu
economy/N	poruLaataaram
ecosystem/N	uyir poruLkaL cuuzhnilaikkut takkavaaRu ceyalpaTum muRai
ecstasy/N	mey maRanta inpam
ectoplasm/N	uyir aNuvin veLippuRam
ecumenical/ADJ	ellaavaRRaiyum uTpaTuttiya
eczema/N	cirangku
edacious/ADJ	perum avaa uLLa
eddy/N	1.cuzhaRci;2.ndiirccuzhi
edge/N	1. veTTum pakuti 2. aruku
edge/VT	kuuraakku
edging/N	karai kaTTu
edible/ADJ	uNNattakka
edict/N	pirakaTanam
edification/N	teLiyac ceytal
edifice/N	kampiiramaana kaTTiTam
edify/VT	ndal ozukkam pooti
edit/VT	uruvaakku
edition/N	patippu
editor/N	1. patippaaciriyar
editorial/ADJ	itazhaaciriyarukku uriya
educable/ADJ	kalvi kaRkat takka
educate/VT	kalvi kaRpi
education/N	kalvi
educe/VI	veLik koNTu vaa
eel/N	vilaangku miin
eerie/ADJ	accamuuTTukiRa
effable/ADJ	collattakka
efface/Vt	azittu viTu
effect/N	viLaivu
effect/Vt	ceytu muTi
effective/ADJ	ceyalaakkam uTaiya
effectual/ADJ	muTivaana payan uTaiya
effectuate/VT	ceytu muTi

effeminacy/N	peN tanmai mikuntirukkum paNpu
effeminate/ADJ	aaN tanmai aRRa
effervesce/VT	koti, nuraittezu
effervescent/ADJ	kumiz uNTaakkukiRa
effete/ADJ	muRRilum kaLaittup poona
efficiency/N	iyakkum tiRam
efficient/ADJ	tiRamai uLLa
effigy/N	oruvarin uruva amaippu
efflorescence/N	malarcci
effluent/N; ADJ	vazintooTum poruL
effluvium/N	aruvaruppuuTTum kaNNukkut teriyaata aavi
efflux/N	niirooTTam
effort/N	muyaRcci
effortless/ADJ	eLitaana, muyaRci teevaippaTaata
effrontery/N	avamariyaataiyaana
effulgent/ADJ	pirakaacamaaka oLi viTum
effuse/VT&I	vazintooTu
effusive/N	tangku taTayaRRup piiriTukinRa
eft/N	palli vakai
eftsoon/ADV	piRaku
egalitarian/a;N	elloorum camam enpatu caarnta
egg/N	muTTai
egg/VT	varaivu paTuttu
eglantine/N	muT ceTi vakai
ego/N	‘naan’ enRa akangkaaram
egocentric/ADJ	naan ennum munaippuLLa
egoism/N	taRperumaik koLLutal
egomania/N	naan ennum veRi
egotism/N	taR pukazcci
egotist/N	taRperumaiyaaLar
egregious/ADJ	atircci uNTaakkukinRa
egress/N	veLiyee pookum vazi
Egyptology/N	ekiptiyar
egyptology/N	ekiptiya pazamai
eider down/N	vaattin menmaiyaana iRaku
eidolon/N	uru veLit tooRRam
either/ADJ;PN	iraNTil onRu
ejaculate/VT	tiTiirenak kattu
eject/VT	oruvarai veLiyee turattu
eke/VT	kuRai nirappu, teevaiyai niRaivu cey
eke/ADV	meelum
elaborate/ADJ	mikunta akkaRaiyuTan ceyyappaTTa
elaborate/VT	virivaaka viLakku
elapse/VI	kazittu viTu
elastic/ADJ	azutti nerukkiya piRakum allatu izuttu niiTTiya piRakum nekizum tanmai uTaiya
elate/VT	uukkappaTuttu
elated/ADJ	mika makizcciyooTu irukkiRa

elbow/N	muzangkai
elder/ADJ	uRavinaril muutta
elder/N	veN malarkaL koNTa mara vakai
elderly/ADJ	vayatil muutta
eldest/ADJ	kuTumpattil mutal piRanta
ELDorado/N	vaLam mikka kaRpanai naaTu
elect/VT	pativin muulam teernteTu
elect/ADJ	teernteTukkappaTTa
election/N	vaakeTuppu muulamaakat teernteTuttal
elective/ADJ	teernteTuppukkuriya
elector/N	vaakkaaLar
electorate/N	vaakkaaLar tokuti
electric/ADJ	min aaRRalukkuriya
electrical/ADJ	“
electrician/N	minniyal vallunar
electricity/N	min aaRRal
electrify/VT	minnuuTTu
electrocute/VT	min cakti celuttik kol
electrode/N	min vaay
electron/N	min aNu
electronic/ADJ	min aNu paRRiya
electrotherapy/N	minnaaRRal koNTu nooy tiirkkum muRai
elegance/N	ciiriya paNpuTaiya
elegant/ADJ	azakuTaiya
eligiac/ADJ	pulampaR paaTTiRkuriya
elegy/N	irangkaRpaa
element/N	onRin pakuti
elemental/ADJ	iyaRkaiyin muulam caarnta
elementary/ADJ	muulak kooTpaaTukaLukkuriya
elephant/N	yaanai
elephantiasis/N	yaanaikkaal nooy
elevate/VT	uyarttu
elevation/N	meeTaana iTam
elevator/N	paTTai vaarooTu iNaintuLLa vaaLikaLait tuukkum allatu iRakkum poRi
elevenses/N	pakal uNaviRkkum piRpakal uNaviRkkum iTaiyee uTkoLLum ciRRuNTi
elf/N	ciRu teyvam
elfin/ADJ	cuRumpu teyvam caarnta
elflock/N	caTai muTi
elicit/VT	veLik koNTu vaa
elide/VT	acaiyai uccarikkaatu viTTu viTu
eligible/ADJ	takunta
eliminate/tVT	niikku
elinguation/N	naakkai veTTum taNTanai
elision/N	collil acai keTTu maRaital
elite/N	ciRantavarkaL
elitism/N	uyar makkaL aaTciyil nampikkai

elixir/N	anaittu nooy nivaaraNi
Elizabethan/N	mutalaavatu elicapet araciyin kaalattaic caarnta
ell/N	45 angkulattiRkkuc camamaana aLavu
ellipse/N	niiL vaTTam
ellipsis/N	vaakkiyac col eccam
elm/N	airooppiya peru mara vakai
elocution/N	col tiRan
elongate/VT&I	niiLac cey
elope/VI	kaataluTan viiTai viTTup poo
eloquence/N	uNarccikaL eRRukk koLLum vakaiyil payanpaTuttaappaTum aaRRal mikka mozi
else/ADV	allatu
else where/ADV	veeRu iTattil
elucidate/VT	teLivaakku
elude/VT	tappic cel
elusion/N	putticaalittanamaakat tappittuk koLLutal
elusive/A	nazuvit tappittuk koLkiRa
elutriate/VT	pizintu (a) kazuvi cuttam cey
elvish/N	kuRumpu ceykiRa
Elysium/N	kireekka cuvarkkam
em/N	accuk kooppatil oru aLavu
emaciate/VT&I	melivuNTaakku
emaciated/ADJ	uTal melinta
emanate/VI	vazhi
emancipate/VT	aTimait taLai aRu
emasculate/VT	koozaiyaakku
emblam/vtVT	piNattai naRumaNamuuTTi paatukaattu vai
embankment/N	ndiirai niRutti vaikkum karai
embargo/N	ndiRutti vaikkum kaTTaLai
embark/VT;VI	toTangku
embarrass/VT	manattiRkku tollaik koTu
embarrassment/N	mana uLaivu
embassy/N	oru naTTut tuutuvarin poRuppukaL
embattled/ADJ	poorukkut tayaar nilaiyil irukkiRa
embay/VT	ellaa iTangkaLilum cuRRi vaLaittuk koL
embed/VT	kiTattu
embellish/VT	azhakup paTuttu
ember/N	ndiiru puutta neruppu
embezzle/VT	tanakku allaata paNattai tannuTaiya nalanukkaaka celaviTu

APPENDIX 3

A dictionary of technical terms in linguistics – English-Tamil

(An electronic dictionary of technical terms (6000 words) to transfer linguistic text in English into Tamil has been prepared by me to facilitate lexical transfer.A Glossary of Standardised Technical Terms in Linguistics English-Tamil (Rangan & Chandrasekaran, 1994)is used to prepare this. Also I have incorporated technical terms found in ATS. The sample is given below.)

Abbreviated word	-	curukkac col
Abbreviation	-	curukkam
Abdominal breathing	-	undti muuccumaaga
Abdominal cavity	-	aRai
linguistic Ability	-	mozhi vallamai
Ablative case	-	niingkal
Ablative	-	veeRumai
Ablaut	-	uyireeRRam
Absey	-	akara varicai
Absolute	-	muzu, taniththiyanka caarpilaa, muRRu
Abolute form	-	vaTivam
Absolute past	-	muzu iRandta kaalam
Absolute pitch	-	pitch caarpilaa icaimai
Abolute synonymy	-	muRRu oru poruTpanmozhi
Abstract	-	aruvam; nduN
Abstract level	-	aruva ndilai
Astract Phonology	-	aruva oliyaniyal
Abstract word	-	aruva col
Abstraction	-	nuNmaiyaakkam
Abutting	-	uTanilai
Accent	-	oliyazuttam
Bound Accent	-	caaroliyazuttam
Emotive Accent	-	kiLar oliyazuttam
Free Accent	-	tani oliyazuttam
Immutable Accent	-	maaRaa oliyazuttam
Medial Accent	-	iTainilai oliyazuttam
Morphological Accent	-	urupan oliyazuttam
Pitch Accent	-	icaimai oliyazuttam
Stress Accent	-	acai oliyazuttam
Accent marker	-	oliyazuttakkuRi
Accent shift	-	oliyazutta nilaimaaRRam
Accentuation	-	oliyazuttal
Acceptablity	-	eeRpuTaimai
Accepted usage	-	eeRpuTai vazakku
Accessibility hierarchy	-	eLivaral paTinilai

Accidental phonetic similarity - oliyaniyal taRceyal oRRumai
Acculturation - paNpeeRpu
Linguistic - mozhip paNpeeRpu
Accultured sense - paNpaaTTu iNakkap pulan
Accuracy - tulliyam
Accusative case - ceyapaTuporuL veeRRumai
Acoustic - oliyiyakka, oli
Acoustic equivalence - oliyiyakkap paNpu nikari
Acoustic feature - oliyiyakka kuuRu
Acoustic filter - oli vaTippaan
Acoustic image - oliyiyakkap paTimam
Acoustic phonetics - oliyiya takaviyal
Acoustic process - oliyiyakkac ceyaRpaaTu
Acoustic spectrum - olimaalai
Acoustic structure - oliyiyakka amaippu
Acoustic technique - oliyiyakka utti
Acoustician - oliyiyakkaviyalaar
Acoustics - oliyiyakkaviyal
Acquisition - iiTTam
Language Acquisition - mozhi iiTTam
Acrolet - meelnilai vazakku
Acronym - talaippezuttan
Action - ceyal
Action verb - ceyal vinai
Active articulator - iyangkolippi
Active colloquial
Vocabulary - vazakkup peeccuc coRRokuti
Active sentence - ceyvinai
Active state - iyangkunilai vaakkiyam
Active verb - ceyvinai
Active voice - ceyvinaippaaTu
Actor - ceypavan
Actualization - meymmaiyaakkam
Adam’s apple - toNTai muTiccu
Adaptability - tazuviyalpu
Adaptation - tazuval
Language - mozit tazuval
Addition - ceerkkai, kuuTTu
Addition - rule kuuTTu viti
Addition transformation - ceerkkai maaRRam
Additive - ceerppu kuuTunilai
Additive endocentric-
Coordination-
Construction - kuuTunilai uLvaTTa camanilaik kuuTTu
Additive morph - ceerkkai urupu
Address viLi-
Address system - viLi ozungkumuRai
Address term - viLippeyar
Addressee - viLikoLvoon
Addressor - viLippoon

Adequacy	-	niRaivu
Descriptive Adequacy	-	varuNanai niRaivu
Explanatory Adequacy	-	viLakka niRaivu
Observational Adequacy	-	taravu niRaivu
Adjectival clause	-	peyaraTai eccac toTar iyaibu
Adjectival concord	-	peyaraTai iyaipu
Adjectival form	-	peyaraTai vaTivam
Adjectival noun	-	peyaraTaip peyar
Adjectival participle	-	peyareccam
Adjective	-	peyaraTai
Demonstrative Adjective	-	kuuTTup peyaraTai
Derived Adjective	-	aakkap peyaraTai
Descriptive Adjective	-	varuNanaip peyaraTai
Inherent Adjective	-	iyalpup peyaraTai
Interrogative Adjective	-	vinaap peyaraTai
Non-restrictive Adjective	-	inaccuTTillaa peyaraTai
Numeral Adjective	-	eNNup peyaraTai
Predicate Adjective	-	payanilaip peyaraTai
Qualitative Adjective	-	paNpup peyaraTai
Quantitative Adjective	-	aLavup peyaraTai
Restrictive Adjective	-	inanjcuTTup peyaraTai
Adjective phrase	-	peyaraTait toTar
Adjective shift transformation	-	peyaraTai nilai maaRRam
Adjective transformation	-	peyaraTai maaRRam
Adjunct	-	toTaraTai, aTai
Restrictive	-	inanjcuTTu aTai
Transformation	-	maaRRam
Adjunct transformation rule	-	iNaippu maaRRu viti
Adjunction	-	iNaippu
Adjunction daughter	-	aatikkak kiiziNaippu
Adjunction sister	-	cama aatikka iNaippu
Adjunction transformation	-	iNaippu maaRRam
Administrative form		
Administrative language	-	aaTci mozi
Admissible combination	-	iNaiyum kuuTTu
Abstratum	-	iNaitaLam
Adult	-	vayatu vantavar
Advancement rule	-	muneeRRu viti
Adverb	-	vinaiyaTai
Of manner	-	paangku vinaiyaTai
Of place	-	iTa vinaiyaTai
Of time	-	kaala vinaiyaTai
Demonstrative	-	cuTTu vinaiyaTai
Derive	-	aakka vinaiyaTai
Inherent	-	iyalpu vinaiyaTai
Interrogative	-	vinaa vinaiyaTai
Sentence	-	vaakkiya vinaiyaTai

Adverb of manner - paangku vinaiyaTai
Adverb of place - iTa vinaiyaTai
Adverb of time - kaala vinaiyaTai
Adverb preposing
Transformation - iNaippu maaRRam
Adverbial - vinaiyaTai
Place iTa - vinaiyaTai
Time kaala - vinaiyaTai
Adverbial noun - vinaiyaTaip peyar

Adverbial participle - vinaiyeccam
Adverbializer - vinayaTaiyaakki
Aesthetic ideology - azakiyal karuttu nilai
Aesthetic vocabulary - azakiyal coRRokuti
Affective meaning - uNarporuL
Affective verb - iyakku vinai
Affinity - oTTuRavu
Affirmation - uTanpaaTu
Affirmative form - uTanpaaTTu vaTivam
Affix - oTTu
Derivational - aakka oTTu
Inflectional (col) - tiripu oTTu
Affixation - oTTaakkam
Affricate - aTaippuracoli
Voiced kural - aTaippuracoli
Voiceless - kuralillaa aTaippuracoli
Affrication - aTaippuracal
Age and area theory - kaala iTak kooTpaaTu
Agent - vinaimutal
Agent deletion - vinaimutal niikkam
Agentive noun - vinai mutal peyar
Agentive phrase - vinai mutal toTar
Agentive suffix - vinai mutal pinnoTTu
Agglutinative - oTTunilai
Aggultinative stage - oTTu nilai
Agreement grammatical - uTanpaaTu
Grammatical ilakkaNa - uTanpaaTu
Agreement Transformation - uTanpaaTTu maaRRam
Air - kaaRRu
Egressive Air - puRauyirppuk kaaRRu
Glottalic Air - kuralvaLaik kaaRRu
Ingressive Air - akauyirppuk kaaRRu
Pulmonic Air - nduRayiiral kaaRRu
Velaric Air - pinnaNNak kaaRRu
Air cavity – kaaRRaRai
Air chamber - kaaRRaRai
Glottalic Air chamber - kuralvaLaik kaaRRaRai
Pulmonic Air chamber - nuRaiiiral kaaRRaRai
VelariAir chamber - pinnaNNak kaaRRaRai
Air molecule - kaaRRut

APPENDIX 4

ENGLISH ANALYSIS DICTIONARY

(Only limited words found in the ATS has been taken here. A sample is given below)

1.The regular inflections are taken care of by word formation rules

actions = action + SINGULAR
acts = act + THIRD PERSON SINGULAR + PRESNT
arranged = arrange + PAST; arrange + PAST PARTICIPLE
argued = argue + past; argue + PARTICIPLE
arrangements = arrange + PLURAL
assigns = assign + third person singular + present

2. The irregular formations have been taken care as special cases.

went = go + past
feet = foot + singular
knew = know + past
oxen = ox + plural

3. For a verb the following information of the following type will be provided.

i. The base form of ‘tried’ is ‘try’.
ii. It is a VERB.
iii. It often takes a present participle (-ING) COMPLEMENT.
iv. It can be constructed as PAST tense or PAST PARTICIPLE.
v. Its number can be PLURAL or SINGULAR.
vi. It is often used as a TRANSITIVE verb.

APPENDIX 5
TAMIL GENERATION DICTIONARY

Tamil generation dictionary captures the inflectional and derivational meanings given in terms of features and convert them into words. The formative rules take care of inflectional and derivational formations.

actions = action + SINGULAR = *ceyalkaL*

act V1 =act +NON THIRD PERSON SINGULAR +PRESENT= *ndaTi*

acts V1S= act + THIRD PERSON SINGULAR + PRESNT

=ndaTikkiRaar/ndaTikkiRatu

acted V2 =act+PAST = *ceykiRaar*/ *ceykiRatu*

acted V3 =act+PAST PARTICIPLE=*ndaTittu*

acting V4=act+PRESENT PARTICIPLE=ndaTittukkoNTu

arrangements N = arrangement + PLURAL= *ozhungu paTuttappaTTa ndilaikaL*

arrangeV1 =arrange+NON THIRD PERSON SINGULAR =*ozhungku paTuttu*

arrangesV1S=arrange+THIRD PERSON SINGULAR

=ozhungkupaTuttukiRaar/ozhungkupaTuttukiRatu

arranged V2=arrange+PAST=

ozhungkupaTuttinaar/ozhungkupaTuttiyatu

arrangedV3 =arrange + PAST PARTICIPLE = *ozhungkupaTutti*

arranging V4=arrange+PRESENT PARTICIPLE=*ozhungkupaTuttikoNTu*

arguments N=*vaatangkaL*

argueV1=argue+NON THIRD PERSON SINGULAR=*vaati*

arguesV1S=argue+THIRD SINGULAR PERSON=*vaatikkiRaar/vaatikkiRatu*

arguedV2 = argue + PAST = *vaatittaar/vaatittatu*

argued V3=argue +PAST PARTICIPLE= *vaatittu*

arguingV4=argue+PRESENT PARTICIPLE=*vaatittukkoNTu*

assigns = assign + third person singular + present

went = go + past = *poonaar/poonatu*

feet = foot + plural = *paatangkaL*

oxen = ox + plural = *kaaLaikaL*

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